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THE PHILOSOPHICAL REVIEW

AT THE TIME when THE PHILOSOPHICAL REVIEW was inaugurated, there was neither an organization nor an organ of American philosophy. In his Prefatory Note to the first volume, its founder and first editor, Jacob Gould Schurman, dedicated the new journal to "the organization, the diffusion, and the increase of philosophical knowledge and activity in America". He further expressed the hope and the expectation that "the philosophical genius of the nation" would "find in the new periodical a medium of free expression, an aid to full and harmonious development, and an instrument for ministering to its needs". And he promised that, despite its support by private endowments, the journal would "combine an impartiality and catholicity of tone and spirit", would "not be the organ of any institution, or of any sect, or of any interest", but would "be and remain, according to the terms of the subsidy, an absolutely free organ, national and international, of general Philosophy".

With the present number the REVIEW enters upon its fiftieth year. In noting the occasion, the present editors record their appreciation of the fact that the hopes for the journal entertained by its founder have been realized in such a generous measure. They also wish to re-dedicate it to the purpose and policy which he formulated and which their distinguished predecessors devotedly followed through so many years. And they express the hope that it may long continue to serve the cause of American philosophy and of freedom as fruitfully as it has served that cause during the first forty-nine years of its history.

LA PHILOSOPHIE EN FRANCE, 1939-1940

EN LISANT les dates qui figurent ci-dessus, les philosophes se rappelleront que la France, au cours de cette année universitaire, a subi des malheurs comparables aux moments les plus tragiques de son histoire. On ne s'étonnera pas que ces temps douloureux, qui ont grandement fait appel à notre philosophie—au sens populaire où philosophie veut dire stoïcisme—aient sensiblement enrayé le mouvement de la production philosophique, qui avait été si riche l'année précédente.[1]

Le 13 Janvier est mort Abel Rey, âgé de 66 ans. Il enseignait à la Sorbonne depuis 1919, et dirigeait l'Institut d'Histoire des Sciences de l'Université de Paris. Sa santé, toujours médiocre, ne l'a pas empêché d'écrire beaucoup. Il avait débuté par des *Leçons de philosophie et de psychologie:* la dualité de ce titre est assez caractéristique de l'époque (1903); peu après, il publia un petit livre d'ensemble sur *La philosophie moderne.* Mais dès 1906, il s'orientait vers le domaine qui devait rester le sien, par ses thèses: *La théorie de la physique chez les physiciens contemporains, L'énergétisme et le mécanisme,* suivies plus tard d'un livre sur *Le Retour éternel et la philosophie de la physique.* Il avait commencé une Histoire des Sciences, dont trois volumes ont paru: *La science orientale avant les Grecs, La jeunesse de la philosophie grecque, La maturité de la pensée scientifique en Grèce,* tous ouvrages très instructifs et solidement documentés; il en laisse un quatrième en manuscrit, presque achevé, sur la science au Moyen-Age. Il dirigeait la revue *Thalès,* organe de l'Institut d'Histoire des Sciences, et collaborait aux travaux du "Centre de synthèse", ainsi qu'à l'*Encyclopédie française.*

Le 25 mars, nous avons perdue Célestin Bouglé, une de nos figures philosophiques les plus originales et les plus attachantes. Nettement "homme de gauche", très attaché à la démocratie, aux idées libérales et laïques, il exerçait une grande influence sur les hommes politiques, sans l'avoir été lui-même. Mais il n'avait rien d'un doctrinaire: jamais dogme philosophique ou consigne collective n'a fait obstacle au libre exercice de sa raison. Jusqu'à la maladie à laquelle il a succombé, dans sa soixante-dixieme année,

[1] Voir l'important article de M. l'Inspecteur général Parodi dans le N° de Janvier 1940.

il était resté d'une jeunesse physique et mentale qui faisait oublier son âge : excellent joueur de tennis, marin passionné pendant ses vacances, il attirait toutes les sympathies par son franc-parler, la gaieté et l'indépendance de son caractère. Comme professeur à la Sorbonne, puis comme Directeur de l'École Normale, il était très aimé des étudiants et avait sur eux grande influence. Son ouvrage sur *les Idées égalitaires* a été particulièrement apprécié. Il a écrit aussi *Les Socialismes français, Proudhon, Le Solidarisme, Qu'est-ce que la Sociologie? L'évolution des valeurs, Vie spirituelle et action sociale,* et de nombreux articles dans les revues et les journaux. Mais il a surtout agi par son enseignement, consacré à l'histoire et à la philosophie des questions économiques, et par son action personnelle dans le "Centre de documentation sociale" (à la fois bibliothèque, office d'informations et séminaire d'études) qu'il avait organisé à l'École Normale.

I

L'évènement philosophique le plus intéressant de cette année—bien que ce soit un début dont la guerre a arrêté la suite—est sans doute la publication du premier volume de la collection "Logos", que dirige M. Louis Lavelle, récemment nommé Inspecteur général de l'Education nationale. Cette collection ne fait double emploi ni avec la "Bibliothèque de philosophie contemporaine" d'Alcan, commencée depuis soixante ans, ni avec la "Bibliothèque de philosophie scientifique" de Flammarion, ni avec la "Nouvelle Encyclopédie philosophique" fondée par le regretté Doyen Henri Delacroix, et que dirige maintenant M. le Professeur Bréhier. Il s'agit, si l'on me permet une expression qui force un peu la note, mais qui est la plus propre à en donner l'idée juste, d'un ensemble de manuels pour l'enseignement philosophique supérieur : c'est-à-dire pour l'enseignement donné, dans les classes les plus élevées des Lycées, aux élèves déjà bacheliers qui se préparent au concours de l'Ecole Normale, et pour ceux qui se préparent, dans les Facultés, aux divers "certificats" dont la réunion confère le titre de licencié. C'est à ce niveau d'études que se propose de correspondre la collection "Logos". Elle n'a pas pour objet de se substituer à l'action personnelle du maître, plus essentielle en philosophie que partout ailleurs ; elle ne vise pas non plus, cela va de soi, à rem-

placer les études de recherche et d'exposition philosophiques qui se poursuivent dans les années d'Université postérieures à la licence.[2]

Ce premier volume, très représentatif, est dû à M. René Le Senne, Professeur au Lycée Louis-le-Grand et à l'École Normale de Sèvres, un des hommes les plus marquants de sa génération philosophique. Il a pour titre *Introduction à la Philosophie*.[3] Bien que très personnel—ou plûtôt même parce qu'il est très personnel—il peut donner une idée juste du niveau qu'atteint l'enseignement philosophique français dans les milieux auxquels est destinée la collection "Logos". Un fonds commun de vérités philosophiques d'une part—car dans ce qu'on appelle philosophie il y a bien des choses semblables aux connaissances scientifiques, que l'on comprend plus ou moins profondément selon ses capacités, mais qui cependant forment un terrain commun pour ceux qui les possèdent;—mais aussi, d'autre part, une manière originale de les présenter, de les communiquer, de leur infuser cet intérêt affectif qui donne à un enseignement comme celui de M. Le Senne une prise si puissante sur l'orientation intellectuelle des étudiants.

Pour l'essentiel, un philosophe instruit ne peut donc que souscrire à ce qu'expose l'auteur—sauf, me semble-t-il, dans le chapitre intitulé "La Valeur ou Dieu" et dans le paragraphe sur "La Mort". Il y a là des pages d'un grand intérêt, mais discutées. Ceci ne veut pas dire qu'à mon avis l'idée de Dieu soit étrangère à la philosophie: mais M. Le Senne réunit sous ce nom l'idée d'une puissance infinie, d'une activité absolue et unique, qui est l'origine de l'univers; celle d'une existence personnelle, vivante et libre, analogue à celle de l'homme; enfin celle d'une source et d'une garantie des valeurs. L'identification de ces trois idées, dont la troisième appellerait elle-même des réserves, voilà ce qui ne va pas sans de grandes difficultés. La laisser à l'état de problème à

[2] Diplôme d'Etudes supérieures de philosophie; Agrégation; Doctorat d'Université.—Le Doctorat ès-lettres, ou Doctorat d'Etat, qu'il ne faut pas confondre avec le précédent, est un grade que confèrent les Facultés, mais qui est préparé tout à fait en dehors d'elles, par des hommes qui ne sont plus des étudiants et qui, le plus souvent, sont même déjà professeurs de philosophie dans les Lycées.

[3] In 8° carré, x-444 pages, édité par les Presses Universitaires de France. —M. Le Senne avait déjà employé ce titre autrefois pour un ouvrage ayant des parties communes avec celui-ci. Mais il est loin d'en être simplement une nouvelle édition.

résoudre, ou de but à atteindre, serait gagner en universalité. On en peut dire autant de l'immortalité individuelle. Mais d'ailleurs, dans ces chapitres même sur Dieu et la mort, il y a de très belles et très convaincantes réflexions incidentes, notamment sur la solidarité des valeurs, et la perversion profonde dont est susceptible chacune d'elles, quand un esprit étroit s'y enferme, et ne tient plus compte des autres.

Pour le reste de l'ouvrage, il n'y aurait guère à discuter que sur des détails ou des nuances: la force et la lucidité en sont les caractères les plus frappants. On y parcourt d'abord, comme on dit volontiers aujourd'hui, un "itinéraire": l'itinéraire que part de la mentalité d'un homme encore étranger à la philosophie, et qui, par des degrés successifs, l'amène à comprendre, tour à tour, l'idéalisme psychologique, l'idéalisme transcendental, l'idéalisme absolu: un esprit doit avoir passé par là pour être libéré du matérialisme naïf et des préjugés du même genre qu'engendrent spontanément la vie, c'est-à-dire les besoins animaux et le cours ordinaire des relations économiques ou sociales, qui y tiennent de si près.

Rien de tout ce qu'on appelle matière ne peut exister sans l'esprit. Mais qu'est-ce que l'esprit? Ce n'est pas une chose; c'en est même le contraire: il ne se caractérise que par son action et sa personnalité; la science, l'art, la morale, la religion en sont les fonctions essentielles. Aux valeurs communément admises de Vérité, de Beauté, de Morale, M. Le Senne ajoute l'Amour, qui complète heureusement par son action commune ce que les autres séparément auraient de trop spécial.[4] Toute la *via purgative* du début rend enfin possible cette thèse, si philosophique, mais si paradoxale pour "l'homme du torrent",[5] que les valeurs ont une réalité *sui generis*, plus profonde et plus solide que celle des choses en soi.

Le chapitre qui termine ce beau livre porte un titre original et suggestif: "Nous". Dans ce qu'il nomme ingénieusement la *communication*, la *collaboration*, le *concert* et la *communion* (répondant à nos quatre formes d'idéal, et dominées par la dernière)

[4] Mais cela le conduit d'autre part, à réduire beaucoup le champ de celles-ci: il voit, par exemple, le propre de la morale dans l'ordre public, les tribunaux, les casernes et le payement consciencieux de l'impôt. Est-ce bien ce qu'elle a d'essentiel? [5] Expression de Renouvier.

se trouve en effet tout le programme de la vie spirituelle. Il ajoute que l'union la plus haute et la plus sûre, l'union métaphysique "se crée dans la solitude"; et qu'elle est bien différente en cela du simple conformisme. Grande vérite, je le crois aussi, quoiqu'on m'ait plus d'une fois attribué l'erreur contraire; et je me reproche de ne pas y avoir insisté plus longuement dans ce que j'ai écrit sur la valeur de l'identification:[6] il n'y a de vraie communauté que celle qui naît d'une convergence libre et spontanée. Comme le dit avec force M. Le Senne, l'identité est sans valeur quand elle n'est que l'acceptation passive d'une même attitude d'esprit. Ajoutons seulement: mais il n'y a pas de valeur plus haute, quand elle se réalise d'elle-même, sans contrainte, sans intérêt, sans séduction, sans suggestion, sans tromperie.

Cet ouvrage a paru à la veille de la tempête. Celle-ci, en forçant les Français à prendre conscience de certaines erreurs et de certaines faiblesses, a jeté un grand désarroi dans le sentiment du bien et du mal. C'est le propre de toutes les périodes de bouleversement. La ruine de préjugés comme le pur individualisme ou le droit divin du suffrage universel; la réaction contre la démagogie, contre les intérêts de parti ou de classe, contre la facilité, ne doivent pas être confondus avec le mépris de la personne humaine et l'abandon de cet humanisme dont l'*Introduction à la philosophie* relève si vigoureusement la valeur fondamentale. Je ne parle pas ici d'un danger imaginaire: on pouvait lire au mois de juillet dernier, dans un des plus grands journaux français, un article d'un écrivain bien connu, qui jetait pêle-mêle par dessus bord, comme étant l'origine de nos désastres, non seulement la politique des partis, l'abdication des élites devant les majorités, mais aussi et en même temps, l'idéalisme politique, la croyance aux droits de l'homme et à la perfectibilité humaine, l'espoir de la paix universelle.—Un autre, de non moindre réputation, déclarait qu'il fallait nous arracher du coeur, quelque souffrance que nous en éprouvions, toutes les idées auxquelles nous avions cru, et tout d'abord l'idée de vérités permanentes et communes: il n'y a, disait-il, que des vérités relatives au tempérament des individus et des races, et "qui tirent toute leur valeur des conditions d'existence de l'époque dont elles traduisent fidèlement les exigences". Un pareil rela-

[6] *La Dissolution opposée à l'Évolution*, Alcan, 1899.—*Esquisse d'une psychologie des valeurs*, Le Caire, Bibliothèque de l'Université, 1930.—*Les illusions évolutionnistes*, Alcan, 1931.

tivisme, par son culte de la vie, et sa crainte de l'absolu, aboutit précisèment aux mêmes conséquences que le matérialisme marxiste si énergiquement réprouvé par les mêmes auteurs.

Certes, ce n'est pas l'ébranlement de la guerre et de la défaite qui a créé le "biologisme" philosophique, pour qui tout idéal n'est que l'expression temporaire des besoins de l'individu, du groupe ou de l'espèce, et pour qui toute la réalité, humaine, animale ou végétale, est suspendue à la grande loi de la lutte pour la vie. L'évolutionnisme darwino-spencérien avait étendu depuis longtemps de profondes infiltrations dans la mentalité du public moyen qui lit les journaux: il fournit une justification si facile à l'égoîsme individuel ou collectif, à tout ce qui se révolte dans la nature humaine contre les valeurs supérieures!—Mais à la faveur des circonstances actuelles, cette pseudo-philosophie gagne aisément du terrain. L'ouvrage de M. Le Senne, qui s'apparente à *l'humanisme* américain, pourra contribuer à y faire obstacle. Il n'est pas seulement une puissante revendication de la *perennis philosophia,* fidèle à Platon comme à Leibniz ou à Kant: il "retrouve l'inspiration qui les rend éternellement accessibles à quiconque voudra les comprendre".

II

M. Maurice Riveline a donné un titre et une forme un peu surprenants à son *Essai sur le problème le plus général: action et logique.*[7] Chose peut-être unique pour une thèse de Doctorat ès-Lettres acceptée par la Sorbonne, ce gros volume est constitué d'un bout à l'autre par un dialogue.[8] Il ne ressemble pas à ceux de Platon, sauf par une certaine manière de serrer la pensée autour des mots. Mais tandis que les personnages de Platon sont aussi vivants que ceux d'une comédie, nous avons seulement ici deux interlocuteurs, dont les noms mêmes soulignent déjà l'abstraction, "le Sage et le Philosophe". Leurs propos font penser aux dialogues dont parle Renan, que tenaient entre eux "les différents lobes de son cerveau". Le "Sage" est l'avocat de l'expérience, de l'intuition, du bon jugement qui ne raisonne pas. Il a le goût de l'harmonie, qui suppose toujours unité et diversité. Il accepte comme légitimes

[7] Bibliothèque de philosophie contemporaine, Alcan, éd. vi-420 p.
[8] Dans la célèbre thèse de Couturat, sur *L'infini mathématique,* se trouve un dialogue entre le Finitiste et l'Infinitiste; mais ce n'en est qu'une des parties.

les besoins essentiels de la vie, et ne croit pas qu'il y ait lieu de se défier des plaisirs, même matériels, s'ils n'ont rien de nuisible. Ce sont là pour lui des données ultimes; il serait absurde d'attendre pour agir qu'on en ait démontré le bien-fondé. Il se satisfait très bien du probable, voire même d'un certain degré d'indétermination et d'obscurité.—Le "Philosophe", au contraire, représente l'esprit logique et critique, sans cesse aiguillonné par l'idée de l'erreur possible, et par la crainte de prendre des instincts ou des habitudes pour des vérités. Toute démonstration repose sur des prémisses; mais ces prémisses elles-mêmes, on n'a le droit de les recevoir que si on en prouve la vérité, autrement on renonce à la raison pour se noyer dans le sentiment. Cette preuve elle-même en réclame une autre, car toute proposition peut être mise en doute, excepté le principe d'identité. Il est la seule pensée qui soit parfaitement certaine, parfaitement valide par elle-même. Il se retrouve, mêlé d'impuretés, dans les idées de cause, d'explication, de raisonnement, de justification. Mais tant qu'on ne l'a pas à l'état pur, on n'a aucun moyen de mesurer la part de fausseté que contient le surplus: aucune assertion n'est donc plus probable qu'une autre, aucun acte mieux justifiable. Il n'y a pas de demi-intelligibilité.

M. Riveline a eu l'intention d'être équitable, et de réserver les droits des thèses adverses. Entre logique et sentiment, dit-il, qui décidera? Ne sera-ce pas toujours, soit la logique, soit le sentiment, puisqu'il n'y a point de juge supérieur à l'un et à l'autre?—Il ne cache pas cependant que le "Sage" lui paraît avoir choisi la meilleure part; et je ne suis pas disposé à le nier; mais son "Philosophe" a-t-il bien usé de tous ses avantages? Les logiciens contemporains, par exemple, ne protesteraient-ils pas quand on leur fait réduire le principe de contradiction et celui du syllogisme au principe d'identité? Ne distingueraient-ils pas entre plusieurs sens de celui-ci? Le professeur Emmanuel Leroux a fait justement, l'année dernière, au "Cercle philosophique de l'Ouest" une excellente conférence[9] sur les assertions, très différentes entre elles, que l'on réunit sous cette étiquette: "l'impératif de cohérence", "l'optatif d'identification" et même "l'assertion de permanence", que Meyerson appelait les uns les autres "principe d'identité". Il me semble que le "Philosophe" contre lequel le

[9] Elle devait paraitre en mai dernier dans le *Bulletin de la Société philosophique de l'Ouest* (Rennes) sous le titre: "Les deux visages du principe d'identité", mais la guerre en a empêché la publication.

"Sage" aurait à défendre son point de vue, de nos jours, serait bien moins ce logicien trop classique qu'un des disciples d'Hamelin, qui soutiennent que tout peut se construire intellectuellement *à priori,* du moins en principe, même la différence qualitative du rouge et du vert.

Mentionnons à cette place une autre publication, très générale aussi, quoique d'une manière assez différente: les *Mélanges de Théologie et de Philosophie*[10] offerts au très sympathique Professeur Arnold Reymond à l'occasion de la retraite prématurée que sa santé l'a forcé à prendre, au grand regret de ses auditeurs. Des nombreuses contributions qu'elle rassemble, quelques-unes sortent du cadre de cette étude; mais parmi celles qui ont un caractère hautement philosophique, il y a lieu de relever celle de M. Miéville, "Le problème de la transcendance et de la mort dans la philosophie existentielle de Karl Jaspers"; sous ce titre modeste, M. Miéville fait beaucoup plus qu'une étude critique: il éclaire et complète la pensée de son auteur de la manière la plus personnelle et la plus vigoureuse;—et celle du Professeur Jean de La Harpe, "Pensée réflexive et mystère de l'existence", où se retrouvent la force, l'élévation et la sincérité habituelles de sa pensée. Toutes deux nous ramènent, en fin de compte, à ce *personnalisme* qui ressortait de l'oeuvre de M. Le Senne, que nous allons retrouver sous bien d'autres formes, et qui dans les *Mélanges Arnold Reymond,* inspire aussi un assez long article de M. Maurice Gex, "Orientations fondamentales en métaphysique". L'expression de nouvelle "monadologie" revient chez plusieurs de ces auteurs et de ceux dont nous parlerons plus loin.

III

Ces chroniques sur *La philosophie en France* ont déjà noté autrefois le mouvement de la psychologie vers la philosophie, et même vers la métaphysique. On a passé par le maximum de séparatisme il y a trente ou quarante ans. La *Découverte de la Personne,*[11] par M. Paul Baudouin, a précisément pour un de ces objets principaux de montrer que ces deux sortes de recherche ne peuvent se séparer. Elle comprend deux thèmes qui d'ailleurs ne sont pas traités à part: le premier est un tableau, très instructif

[10] In 8°, 233 p.; édité par la *Revue de théologie et de philosophie,* Lausanne.
[11] Nouvelle Encyclopédie philosophique, Alcan, éd., 173 p. L'ouvrage a pour sous-titre: *Essai d'un personnalisme analytique.*

et très large, bien qu'il ne soit pas complet, des courants de pensée contemporains qui mettent en relief l'idée de "personne". M. Baudouin en décrit les origines, principalement chez Renouvier. Il en rapproche les écrivains allemands Heidegger, Jaspers, Keyserling, et surtout William Stern, auteur de *Person und Sache;* mais il donne la place la plus importante à C. G. Jung. Il connaît bien, parmi les personnalistes de langue anglaise, W. James et F. C. S. Schiller, J. Th. Merz, Richardson, L. W. Beck, R. T. Flewelling et la revue *The Personalist.* Parmi les Français contemporains, il cite souvent Pierre Janet, qui a tant fait pour rendre la psychologie plus philosophique; Han Ryner, plus littérateur que philosophe, mais plein d'idées intéressantes;[12] des théologiens comme le P. Gillet, le P. Peillaube, le P. Garrigou-Lagrange; Emmanuel Mounier, dont *La Révolution personnaliste et communautaire* est un des textes les plus caractéristiques de ce mouvement,[13] Denis de Rougemont et la Revue *Esprit.* Il en rapproche aussi le récent ouvrage de M. Albert Burloud sur la *Psychologie des tendances.*[14]

Le second thème de ce livre, ce sont les vues de l'auteur et même ses observations cliniques de psychanalyse. C'est bien aussi la personne qui en est l'objet, mais surtout au point de vue de sa composition; il y reconnaît pour ainsi dire quatre personnages faisant effort vers leur unité: sentiment, raisonnement, perception du réel, et intuition. Il s'intéresse aussi beaucoup à ses altérations et à ses anomalies, surtout à sa manifestation sous la forme d'un "double" (comme dans l'autoscopie, et d'ailleurs dans une longue tradition religieuse et philosophique) ou sous la forme de personnages apparaissant dans les rêves. Néanmoins, comme l'œuvre de R. Dalbiez, qu'il cite plusieurs fois, la *Découverte de la Per-*

[12] Pseudonyme: son vrai nom était Henri Ner.

[13] Il faudrait y ajouter, et peut-être même placer en première ligne le *Manifeste du Personnalisme,* du même auteur, qui me paraît être son ouvrage le plus connu.

[14] Je cite tous ces noms au cas où quelqu'un des lecteurs de cet article serait tenté d'entreprendre une étude d'ensemble sur le mouvement personnaliste en France, et ses rapports avec l'humanisme américain, étude esquissée déjà d'une manière très intéressante par le Dr. Christian Richard de l'Université de Los Angeles. Je demanderais une petite place, en ce cas, pour le *Précis raisonné de Morale pratique,* où j'ai essayé de donner une distinction précise de l'"individu" et de la "personne", répondant à ce que demande M. Baudouin dans le chapitre II de son ouvrage. Comme M. Emmanuel Mounier, qu'il plaisante un peu à cet égard, je crois cette distinction extrêmement importante, surtout dans l'état actuel des problèmes moraux.

sonne est une réaction contre les formes de psychanalyse qui expliquent le supérieur par l'inférieur. Il se rattache lui-même à ce courant de philosophie française qui dérive de Maine de Biran, et que M. Benrubi, par une alliance de mots que M. Baudouin accepte volontiers, appelait "un positivisme métaphysique et spiritualiste".

Non moins philosophique est le livre de M. Jean Paul Sartre, *L'imaginaire*[15] dont la conclusion débute ainsi: "Nous pouvons à présent poser la question métaphysique qui a été lentement dévoilée par ces études de psychologie phénoménologique: quels sont les caractères qui doivent être conférés à la conscience, du fait qu'elle peut *imaginer?*"—"Imaginer", en italiques, parce que tout l'ouvrage à été consacré à soutenir cette thèse, très générale, mais de nature incontestablement positive: *imaginer* est une fonction absolument spéciale et irréductible. Les perceptions nous mettent directement au contact du réel, et nous en avons la certitude immédiate; les images au contraire sont toujours connues comme irréelles. Leurs caractères fondamentaux s'opposent. On peut observer avec attention un objet et y découvrir de nouveaux détails qu'on n'avait pas d'abord perçus; une image au contraire ne contient rien de plus que ce qu'elle présente au premier coup d'œil, puisque nous la créons nous-mêmes: il ne saurait y avoir d'observation purement mentale; nous chassons au contraire les images dès que nous voulons y faire attention.—Le perçu d'autre part a toujours des ramifications qui le rattachent à tout ce qui existe dans le monde: l'image est toujours incomplète, isolée, flottante et sentie comme étrangère à celui-ci; elle est dans un autre espace et un autre temps, sinon même en dehors du temps. Proposant cette thèse, M. Sartre s'engageait par là même à soutenir qu'on ne peut jamais prendre une perception pour une image, même lorsqu'elle est faible, confuse ou isolée. De fait, il y a peu d'expériences en ce sens; et les plus connues, celles de Titchener, lui paraissent sans valeur. Il s'engageait aussi—et la gageure était plus risquée—à soutenir qu'on ne prend jamais une image pour une chose perçue, même dans les rêves. C'était aller contre une opinion à peu près universelle; mais M. Sartre crée pour soutenir la sienne une dis-

[15] In 8°, 247 p. Ed. de la *Nouvelle Revue Française*. Cf. du même auteur *L'imagination*, dans la "Nouvelle Encyclopédie philosophique".

tinction nouvelle, et remarquablement ingénieuse. Celui qui se dit en rêve: "Cette fois, je ne rêve pas!" ce n'est pas notre vrai moi, selon lui, mais une *image* de ce moi, à qui nous prêtons en rêve cette réflexion.

L'hétérogénéité du perçu et de l'imaginé conduit à deux sortes de conséquences, les unes métaphysiques: concevoir l'esprit comme puissance absolument libre, de position et de négation, de "néantisation", aussi essentielle à sa nature que la conscience de soi; les autres esthétiques, qui sont peut-être la partie la plus attachante de cette conclusion: l'opposition entre l'œuvre d'art, en tant qu'objet matériel faisant partie du monde, et la même œuvre en tant qu'image, "analogon" de quelque chose d'autre, qui n'appartient pas au domaine du réel. Il y a là des analyses d'une grande force et d'une grande subtilité.

Cependant la thèse, dans son ensemble, a provoqué bien des objections, et parmi elles, une de celles qu'on a élevées de tout temps contre la psychologie d'introspection: n'est-ce pas seulement son propre type imaginatif que le psychologue décrit? La phénoménologie n'est légitime que pour les phénomènes détachables du moi empirique, et possibles à fixer dans leur essence. D'autre part, n'est-ce pas méconnaître les illusions de la conscience, et son caractère départemental par rapport à la vie totale de l'esprit?—M. Sartre a répondu d'avance qu'il n'admet pas l'existence de phénomènes psychiques inconscients. Opinion favorisée depuis quelques années par d'éminents psychologues français, en réaction contre les exagérations du freudisme. Ainsi se trouve réhabilité le célèbre argument: l'essence du phénomène psychique étant d'être donné par la conscience, il ne peut jamais y avoir de phénomène psychique inconscient. Je me souviens qu'à la soutenance de Pierre Janet, en 1889, Boutroux en avait fait l'oraison funèbre: "Voilà, disait-il, une apparence de conclusion rigoureuse, que les faits nous forcent aujourd'hui à abandonner." Cette déclaration avait fait une grande impression et répondait à l'opinion de toute la jeunesse d'alors. Dans combien d'années l'entendra-t-on renouveler avec le même succès?

C'est une psychologie non moins philosophique, malgré certaines apparences, qu'on trouve dans *L'éveil de l'Intelligence*,[16] de M.

[16] Bibl. de phil. contemporaine; Alcan, éd., XV-406 p.

Joseph Mourad. L'auteur est un des membres de cette brillante équipe de jeunes Egyptiens qui sont venus en France se préparer à l'enseignement supérieur de la philosophie. Par un échange fécond pour les deux pays, des philosophes français, MM. Bréhier, Abel Rey, Essertier, Rougier, Koyré, Burloud, et moi-même avons enseigné depuis 1925 à l'Université du Caire. Je mets pour ma part au nombre des années les plus intéressantes de ma carrière celles que j'ai passées à ce travail, en collaboration avec des philosophes égyptiens comme le Dr. Mansour bey Fahmy, le Cheikh Moustafa bey Abd-Er-Razek, le Dr. Ibrahim Madkour et aussi, bien qu'il ne soit pas un philosophe par le titre de sa chaire, l'éminent professeur de littérature arabe, Dr. Taha bey Hussein. On ne trouvera pas déplacé, dans un article sur la philosophie française, ces quelques mots sur certaines de ses relations avec la philosophie étrangère: l'autarcie peut être quelquefois une dure nécessité économique; en matière de pensée, elle serait un désastre.

L'ouvrage de M. Mourad est avant tout documentaire et de caractère "scientifique". Observations et références y abondent. Mais de cet ouvrage plein de faits ressort cependant une philosophie. C'est dans tel ou tel passage incident qu'on peut la remarquer; mais alors on est frappé par son vif sentiment de la solidarité dans les phénomènes vitaux, par l'idée que la vie, même à peine consciente, est suspendue à une pensée directrice et organisatrice. Chaque individu est une véritable unité, non un assemblage ou une résultante. Les réflexes ne sont en aucune manière des mécanismes autonomes et originellement séparés, qui se combineraient pour constituer des systèmes plus complexes. Ils émergent au contraire comme des détails à l'intérieur d'un développement dirigé, et demeurent sous la domination de la structure totale. "Tout système vivant, écrit-il en termes nettement aristotéliciens, tend vers une forme achevée qui est son état d'équilibre, et les étapes qu'il traverse n'ont leur raison d'être que dans le terme auquel il aboutit".

C'est sans doute par cette idée directrice que s'explique l'importance qu'il donne à l'idée de ***maturation***, nouvelle dans la forme scientifique, mais fortement sentie déjà par J. J. Rousseau, comme l'a montré Claparède. L'exercice ne sert presque à rien, tant que le système nerveux et l'état psychologique n'ont pas atteint, d'une

manière spontanée, le développement nécessaire. Il en réunit les exemples les plus divers et les plus curieux. Des larves de batraciens sont divisées en deux groupes; l'un s'exerce librement à la nage pendant plusieurs jours tandis que l'autre est anesthésié: ce dernier, au bout d'une demi-heure nage aussi bien que le premier. Des rats sont nourris, les uns dans l'obscurité, les autres en liberté; le second groupe, mis à la lumière, regagne en quelques instants son retard sur le premier. Deux petites jumelles ont été élevées, l'une à s'exercer activement à monter un escalier, à parler, à lire, et l'autre à ne rien faire de ce genre que plusieurs semaines après sa soeur: elle la rattrapait en quelques jours, parfois en quelques heures d'exercice. L'expérience a été répétée avec le même succès sur deux jumeaux. Et ce ne sont là que quelques uns des faits recueillis par M. Mourad. Quelle leçon pour les parents, si généralement disposés à "pousser" leurs enfants, et à leur imposer un travail fastidieux dans l'espoir de les mettre "en avance sur leur âge"!

IV

M. Emile Bréhier, dans *La philosophie et son passé*,[17] a réuni deux groupes d'études qui tirent leur unité de l'éminente personnalité philosophique de l'auteur, le plus en vue parmi les historiens français actuels de la philosophie. Son habileté aux recherches de détail, précises et approfondies, se manifeste dans ses études sur l'idée de création chez Descartes;[18] mais c'est surtout son expérience des grandes synthèses philosophiques qui a inspiré ses deux chapitres sur les rapports de l'éternel et du changeant dans l'histoire de la philosophie, et sur la notion de causalité appliquée aux doctrines. Il a au plus haut degré la capacité de saisir le *pour* et le *contre*, les aspects multiples des choses et de leur faire leur part: on le voit par example dans la distinction des diverses manières dont suivit la pensée des philosophes, et dans sa profonde analyse de la liaison entre philosophie et histoire de la philosophie. Il croit, lui aussi, à une *perennis philosophia;* il l'entend en un sens beaucoup plus complexe que Leibniz ou Kant, et moins artificiel que Hegel; mais sans cette vérité philosophique permanente, dit-il,

[17] Nouvelle Encycl. philos., Alcan, éd., 146 p. in-12. Depuis la mort du regretté Doyen Henri Delacroix, c'est M. Bréhier qui dirige cette collection.

[18] "Matière cartésienne et création; la création des vérités éternelles dans le système de Descartes; la création continuée chez Descartes.

comment y aurait-il dans la pensée ancienne les éléments qui intéressent l'historien et d'autres qui sont sans valeur? "L'histoire, dont le domaine est temporel, vise pourtant à l'intemporel; et par elle la philosophie cherche dans son passé son éternel présent".

Un autre maître de l'histoire de la philosophie, M. Etienne Gilson, nous a donné une étude originale, abondante et variée, sur *Dante et la philosophie*[19] Ceux qui aiment à s'égayer passeront un bon moment à lire sa critique du P. Mandonnet, qui voulait considérer Béatrice comme une pure allégorie, celle de la théologie opposée à la philosophie et en même temps comme le symbole de la vocation ecclésiastique, dans laquelle Dante, selon lui, se serait d'abord engagé, puis qu'il aurait abandonnée, et dont il aurait eu le regret. A une discussion serrée de cette interprétation, M. Gilson mêle un humour et une ironie qui font penser à Voltaire. Non pas aux dépens de la religion: M. Gilson est aussi catholique que le P. Mandonnet; mais aux dépens de ce respectable dominicain, dont il loue d'ailleurs grandement l'érudition, et les autres travaux de philosophie médiévale.

Lui-même fait ressortir que Dante, loin de tout subordonner à l'autorité religieuse, comme Saint Thomas, admet qu'il y a trois pouvoirs indépendants, directement établis par Dieu lui-même: l'Empire; l'Eglise; la Philosophie (c'est-à-dire, à cette époque, tout ce qui relève de la Raison: la science de la nature, et celle de la perfection morale individuelle). Le salut, le bonheur dans l'autre monde, les révélations métaphysiques, tel est le domaine du Pape, où il a l'autorité souveraine L'Intelligence, étant universelle et impersonelle, n'a pas besoin d'un chef actuellement vivant: celui qui se consacre à la connaissance raisonnée reçoit directement la Lumière qui éclaire tout homme venant en ce monde, et rien ne doit y faire obstacle. Mais dans l'ordre des intérêts matériels, il faut un Empereur: car quiconque possède désirant toujours posséder davantage, on ne peut assurer la paix universelle, et par conséquent le bonheur sur terre, qu'en remettant à un seul homme un pouvoir tel qu'il n'ait rien à désirer de plus pour lui-même et qu'il soit le chef absolu de tous les autres chefs d'État.

Un autre intérêt de ce livre consiste dans les sentiments de sympathie qu'il témoigne à l'égard de l'Italie, et qui, je le crois bien,

[19] Gr. in 8°, x-341 p.; Vrin, éd. "Etudes de philosophie médiévale".

malgré la guerre qu'elle a déclarée à la France, restent ceux de la grande majorité des intellectuels français. Cette guerre, M. Gilson semble l'avoir prévue; parlant dans sa préface des érudits italiens qui ont été ses guides dans l'étude de Dante, particulièrement de M. Michele Barbi, il ajoute ces lignes émouvantes: "Aucune circonstance, que je connaisse ou que je puisse redouter, ne saurait me libérer de cette dette de gratitude, ni du devoir de la publier". Que de philosophes français, en lisant cette phrase, ont pensé à l'histoire de la pensée française, si étroitement liée à celle de l'Italie, et à leurs amis d'au-delà des Alpes!

C'est aussi en un certain sens un hommage à l'Italie que le volume de M. Alexandre Koyré, *Etudes galiléennes*.[20] C'est surtout un recueil de documents précieux pour l'histoire de la pensée scientifique, souvent faussée par des légendes absurdes, comme celle qui fait de Galilée un expérimentateur. S'il relève certaines erreurs commises par celui-ci, il n'est pas moins sévère pour Descartes, dont il souligne également sans indulgence les méprises et les confusions. Et cela ne l'empêche pas de reconnaître le génie de l'un et de l'autre.

Galilée a été, contre l'expérimentalisme des aristotéliciens, le grand restaurateur de la méthode pythagoricienne, platonicienne et archimédienne, dans laquelle M. Koyré voit, comme beaucoup de philosophes français contemporains, la véritable clef de la science. A cet égard, Descartes lui paraît bien inférieur: sa physique n'utilise que les propriétés des figures géométriques, sans nombres ni calculs, tandis que celle de Galilée est essentiellement algébrique. En revanche, Descartes lui paraît plus moderne par un autre côté: chez lui se trouve nettement formulée la notion d'un *Univers* infini, n'ayant pas de centre, pas de direction privilégiée, pas de structure organique, et dans lequel toute action s'exerce au contact et de proche en proche. Galilée au contraire, bien qu'il ait contribué à cette même révolution, n'élimine pas encore complètement l'idée de Monde, de *Cosmos*. De là vient qu'il n'a jamais formulé expressément le principe de l'inertie, latent dans toute son œuvre, mais qui ne sera énoncé en propres termes que par Gassendi. Il n'y a pas là seulement une découverte scientifique, dit M. Koyré, mais le passage à une philosophie nouvelle. L'étendue n'a plus rien

[20] Gr. in 8°, 335 p. Hermann, ed.

de physique: ce ne'st plus que pur espace géométrique. Le mouvement n'est plus une activité réele: c'est une relation fonctionnelle: l'*impetus* n'a de sens que par rapport à des points de repère extérieurs, auxquels il pourrait être transféré. Nous sommes aujourd'hui si pénétrés de ces idées que nous avons peine à comprendre avec quelle difficulté une notion comme celle de l'inertie, en tant qu'indifférence absolute au repos ou au mouvement a pu se substituer graduellement, sans changer de nom, à l'idée d'inertie en tant que résistance au mouvement et tendance au repos. En nous plongeant au milieu des tâtonnements générateurs de ces idées nouvelles, l'ouvrage fortement documenté de M. Koyré nous fait voir à la loupe la marche de cette transformation.

L'auteur bien connu de *Les Sources et les courants de la Philosophie contemporaine en France,* M. Benrubi vient de faire paraître un nouveau livre, non moins abondamment documenté (les notes contiennent plus de 1,100 références) sur *l'Idéal moral chez J. J. Rousseau, Mme de Staël et Amiel.*[21] Sa thèse essentielle est que cet idéal, au fond, est le même et il a de bons arguments pour le soutenir. Philippe Godet avait déjà dit de Mme de Staël qu'elle était "la fille spirituelle" de Rousseau, et Amiel a désigné lui-même le "Citoyen de Genève" comme son principal ancêtre spirituel. Tous trois sont Suisses, et en même temps très européens; tous trois sont des protestants d'origine, des "poètes sentimentaux", opposés à la religion en tant qu'Église constituée, mais profondément attachés à l'idée de Dieu, qu'ils entendent d'une manière plus ou moins immanentiste. Tous trois subordonnent l'intelligence à l'intuition et au cœur; tous trois ont sur l'éducation des idées qui sans être identiques, se continuent l'une l'autre.[22] Les différences, M. Benrubi n'y insiste pas, un peu parce qu'elles se voient assez d'elles-mêmes, beaucoup parce qu'elles tiennent aux circonstances individuelles et qu'il ne s'intéresse qu'aux doctrines. Quand il parle d'Amiel, il s'excuse même d'écrire quelques pages sur ses singularités physiologiques: c'est une digression que lui imposent M. Thibaudet et M. Léon Bopp en rattachant à sa délicatesse sexuelle et à sa continence certaines de ses idées morales.

La partie la plus intéressante de l'œuvre est pourtant celle qui

[21] Bibl. de phil. contemporaine, Alcan, éd. 334 p.
[22] Notamment sur le respect nécessaire du développement spontané, dont nous avons déjà parlé plus haut à propos du livre de M. Joseph Mourad.

concerne ce dernier et le défend contre le reproche de "subjectivisme", que lui ont adressé tant de critiques. Par des textes nombreux, M. Benrubi montre qu'Amiel, en écrivant les seize mille pages de son *Journal* (dont une partie seulement a été publiée) ne considère sa propre individualité que pour y appuyer son effort vers l'universel. Rien ne lui est plus étranger que le culte du moi. Il ne part de lui-même, pourrait-on dire, que comme Descartes part du *Cogito*.

L'ordre historique des questions étudiées cette année en France nous amène enfin au grand ouvrage de M. Pierre Ducassé sur *Auguste Comte*. Il se compose de trois volumes dont l'un est pour ainsi dire l'introduction, et l'autre le complément de l'étude principale.[23] L'auteur, qui n'avait encore publié que quelques articles, est un homme de moins de quarante ans. Il est Secrétaire général de l'Institut d'Histoire des sciences de l'Université de Paris, dont nous avons déjà parlé; et depuis cette anné il dirige la *Revue positiviste*.[24]

Le titre de son œuvre a besoin d'explication. "Méthode" et "Intuition", dans sa pensée, ne correspondent pas, comme on pourrait le croire, à l'antithèse de l'abstrait et du concret. L'intuition, pour lui, ne s'oppose pas à la méthode; elle en est à la fois la source et le moment caractéristique. En outre, l'intuition dont il s'agit est une intuition très spéciale: il s'agit de l'intuition par laquelle est saisi le rapport entre les propriétés imaginables des figures géométriques et l'expression algébrique de ces mêmes propriétés; ce que Cournot appellera plus tard "la correspondance entre l'algèbre et la géométrie". C'est cette intuition, éprouvée d'abord dans son travail de professeur de mathématiques, et même d'inventeur en mathématiques, que Comte va rechercher et retrouver dans la physique, la biologie, la sociologie, et jusque dans les expériences personnelles de sa vie sentimentale. C'est d'elle que vient cette idée de *systématisation*, si essentielle au positivisme;

[23] *Méthode et intuition chez Auguste Comte*, in 8°, x-620 p.;—*Essai sur les origines intuitives du positivisme*, x-272 p.;—*La méthode positive et l'intuition comtienne*, bibliographie, ix-174 p. Bibl. de phil. contemporaine, Alcan, éd.

[24] L'ancien directeur, M. Fagnot est mort au commencement de 1940. La *Revue positiviste* a été, depuis trente ans, le principal organe de la doctrine et de la tradition d'Auguste Comte, entendues très largement. Mais elle n'a pas été, jusqu'à présent, une publication d'influence comparable à celle de la *Revue philosophique* ou de la *Revue de Métaphysique*.

c'est elle qui lui fait saisir d'une manière profondément philosophique à la fois la structure des "sciences abstraites fondamentales" et leur rapport à la réalité.

L'œuvre de M. Ducassé n'a rien de didactique: il n'a pas eu l'intention de faire connaître la doctrine d'Auguste Comte à ceux qui l'ignorent, ou qui en ont seulement une idée superficielle; il ne donne presque aucun texte ni référence. Mais il est plein d'allusions ou de suggestions pour ceux qui ont déjà avec l'auteur du *Cours* et de la *Politique positive* une familiarité approchant de la sienne. Ce n'est pas peu dire, car rarement commentateur a possédé son sujet aussi complètement.

Grâce à son idée directrice, il voit tout le positivisme dans une lumière nouvelle. Il justifie par des raisons plus intrinsèques la thèse de l'unité dans le développement de la philosophie Comtienne, depuis les opuscules des environs de 1820 jusqu'a la *Synthèse subjective*. Ce n'est pas inutile, étant donné que l'interprétation, ou plutôt la falsification de Littré exerce aujourd'hui encore une influence indéniable sur beaucoup d'esprits, même parmi les philosophes français. De plus, à cette même lumière, les idées de progrès, d'altruisme, de culte de l'Humanité, prennent un aspect plus profond, et échappent, estime l'auteur, aux objections qu'on lui oppose d'ordinaire. Loin d'être une simple discipline intellectuelle et sociale, dangereuse pour la vie de l'esprit, l'idéal positiviste s'accorderait entièrement avec les valeurs dont l'intronisation a été la note dominante de cet article. Sans doute Auguste Comte reconnaît qu'il y a parmi les hommes bien des médiocres, incapables de se conduire eux-mêmes pendant leur vie, et voués à un juste oubli après leur mort. Pour ceux-là, l'ordre intellectuel et moral établi par les esprits supérieurs a été et sera un bienfait. Mais il appelle tous ceux qui en sont capables à une attitude progressive, créatrice, puisant aux mêmes sources intuitives que lui-même une originalité personnelle, et le pouvoir de mieux servir l'Humanité. Ainsi le positivisme, qu'on accuse souvent de nous aplatir dans un conformisme définitif, vient rejoindre au contraire ce *personnalisme* contemporain, opposé comme lui à l'individualisme anarchique, et qui tient tant de place aujourd'hui dans le mouvement de la philosophie française.

A. LALANDE

MEMBRE DE L'INSTITUT DE FRANCE

THE NATURE OF RELATIONS

THE proverbial man in the street believes in concrete and sensible things and distrusts speculation. That is how he felt in the ancient times; that is how he feels today. Abstractions are now as much in popular disrepute as they were in the days of ancient Greeks, even though every educated person realizes that the study of immediate experience yields to science nothing but confusion, unless one is capable of generalizations which sufficiently clarified, analyzed and verified have been known to lead to the formulation of a scientific law.

The arm-chair philosopher, on the other hand, usually despises common sense and the attitude of 'seeing is believing'. With Plato's scorn—though not always with his wisdom—he says that the masses "believe in nothing but what they can grasp in their hands".[1] With his head high above the earth, he is inclined to give the world a spiritualistic rather than a materialistic interpretation, even though he might concede that normal trust in perception is derived from the biological need of concrete action.

Neither the man in the street with his 'tough' mind is always right nor the arm-chair philosopher with his 'tender' mind is always wrong. In fact, some problems are better approached in the attitude of common sense, others in the spirit of reflection. There are tasks in everyday life which call for more reasoning than is usually given to them; and there are also questions within the province of speculation which seem to require just a bit more 'toughness' than most philosophers have at their disposal.

Among the latter problems is found that of *relations*. The unfortunate thing about the concept, greatly contributing to the traditional confused treatment of it, is that it is being used in an amazing variety of senses, including logical and psychological, physical and metaphysical, causal and epistemological, mathematical and social, static and dynamic, transitive and non-transitive, symmetrical and asymmetrical, intrinsic and extrinsic, internal and external, etc. As a result, though the literature on the subject is quite extensive, we still find that relation is, as S. Alexander

[1] Plato, *Theaetetus*.

has pointed out, "the vaguest word in the philosophic [as well as in the scientific, we may add] vocabulary".[2]

We do not intend to cope with all the countless implications of the above list of meanings. Rather, we prefer to confine ourselves to the discussion of a narrower field, that of space and time relations. Having thus limited our problem, we are able to ask: What is the precise rôle of relations in the actual world? Have they any cosmic status comparable to that of objects and actions?

I

Ever since Parmenides showed in his forcible logical manner that non-existence cannot separate or divide existence into parts and that, consequently, reality must be an ontological continuity, or plenum, it became difficult to maintain that empty space was absolutely nothing.

In modern times, Descartes reiterated this view in stating that it was "absolutely inconceivable that nothing should possess extension".[3] In an attempt to escape the contradiction implied in the notion of existing emptiness, he defined space as a mode of extensive substantiality providing the multiplicity of moving bodies with a generic unity.[4] In so doing he subordinated relations to substance and reduced space to the plenum of extension. Objects and events became, in this interpretation, mere accidents of organization, superimposed upon the uniform continuity of extension and differing from it only in degree. But this solution of the problem of relations was not quite satisfactory, for it remained doubtful, indeed improbable, that space and matter were fundamentally of the same nature. Nevertheless, Descartes' views constituted distinctly a step in advance over the Aristotelian doctrine, according to which space existed only between objects. The father of modern philosophy succeeded in convincing thinkers that space outside bodies is essentially identical and as it were continuous with space within them.

This consideration led Newton to formulate his theory of absolute space, according to which space is independent of objects and events and persists, self-identical, throughout all times. "Ab-

[2] *Space, Time and Deity* I, 171.
[3] *The Principles of Philosophy* II, pr. 16. [4] *Ibid.* pr. 10.

solute space, in its own nature, without regard to any thing external", he said, "remains always similar and immovable".[5] Newton had to acknowledge, however, that events are no mere irrelevant accidents temporarily dotting the face of immutable space: they form a sort of relative, changeable space directly known to ordinary and scientific experience. Similarly, he was logically compelled to postulate the existence of two kinds of time, one absolute, flowing "equably without regard to any thing external", the other relative and changing, as we perceive it. Unluckily, Newton raised by far more problems than he could solve. Indeed, what is the need of postulating two kinds of space and time? What is the connection between them? How can the existence of absolute space and time be demonstrated? Is the concept of space and time, independent of objects, tenable? Are these plena substantial or relative?

It was against these perplexities that Leibniz directed his speculative fire, in his famous controversy with one of Newton's faithful disciples, Samuel Clarke. Leibniz arrived doubtless at an important insight when he concluded that there is no such thing as a relational field existing independently of, or prior to, relata. He suggested, therefore, that space and time, being inseparable from events, are "formed" rather than "occupied" by them. Space and time were thus conceived as grounded in relations; namely, space as the order of coexistences, and time as the order of successions.[6] Nevertheless, he, too, failed to give us an adequate solution of the problem. Having relegated the two orders to an ideal or logical realm, Leibniz merely combined the Cartesian and the Newtonian theoretical shortcomings in offering us a picture of actuality without relations and a picture of potentiality without true relata. In short, he failed to integrate the concepts of relatum and relation under a single scientifically tenable view capable of accounting for the phenomena of the external world.

This idealistic fault marred also the subsequent variations of the relational theory of space and time; but I believe—and intend

[5] *The Mathematical Principles of Natural Philosophy,* Bk. i, Def. 8, Scholium. *Cf.* J. Locke, his contemporary: "The parts of pure space are immovable" (*An Essay concerning Human Understanding,* II, xiii. 14).

[6] *Letters to Samuel Clarke,* especially the 3rd letter, #4, and the 5th letter, #62.

to show—that the theory is basically correct and can be freed from its fallacies. Thus I concur with C. D. Broad in his opinion[7] that "mathematicians and writers on dynamics have been justified in rejecting relational theory in the forms under which it has been presented in the past; but I think that this is because it has been badly and inadequately stated, and not because it is impossible to make it fit all the facts".

We realize, of course, that few people are inclined to grant the relata and relations the status of full ontological equality. It seems natural to assume that objects and events are somehow more real, more objective than relations—perhaps because relata, as apparently more concrete and sensible in a perceived situation, attract our attention easier than relations. However, the notion of the degrees of existence is highly obscure, if not absurd. There are, no doubt, kinds of reality, which differ among themselves in quality, but certainly not in the fact of existence. Everything actual either is or is-not; no third alternative is, to my mind, thinkable. If thus it is true that there are no degrees of existence, then relations are obviously no less real than relata, no matter what common sense or speculative tradition may stubbornly assert. This point should be vigorously and unconditionally maintained. I regard it as superfluous and confusing to evade the important issue by coining terms like "to intersist".[8] For indeed, if it is true that "there is no evidence that any relation has any being apart from the terms", it is equally true that there is no evidence that any term has being apart from its relations.

Our conclusion is that *space and time relations are as fundamental to reality as are matter, energy and action.*

II

Having concluded that relations and relata are equally real, we must not disregard their distinction. It is, in fact, so clear and sharp that it is necessary to acknowledge that substance and relation play two different rôles in the universe. What can these rôles be?

It may be claimed that, whereas objects are open to sensory

[7] *Scientific Thought*, 113.
[8] E. B. McGilvary, "Perceptual and Memory Perspectives", *The Journal of Philosophy*, June 8, 1933.

inspection, relations are not. But this is simply untrue. For example, you observe two chairs standing five yards apart. This 'apart' is no less visible than the chairs themselves, for you see the distance separating them as 'the space between'.

You are introduced to a couple. The husband is a tall, rather heavy man. His wife is a little, slender lady. Why do you call him large and her small? Obviously, he occupies more space than she does. In this case, your judgment is guided not so much by the 'the space between' as by 'the space within'. This space is directly observable as size.

Relations of time are perceptible in a somewhat different way. A minute or an hour cannot be seen or heard. An interval between two occurrences or the duration of an experience is not reported by our eyes or ears. Nevertheless, we are able to estimate time in a manner that must be called sensory.

The above examples demonstrate clearly that human beings are able to perceive sizes, magnitudes, distances, intervals, and durations no less effectively than objects and events themselves. Words like 'far' and 'near', 'long' and 'short', 'high' and 'low', 'before' and 'after' are so frequently used in everyday speech as to leave no room for doubt that relations are open, directly or indirectly, to sensory inspection.

As a matter of fact, everything we perceive implies both relata and relations. It is as impossible to observe an object apart from magnitude as it is to contemplate a magnitude apart from some thing, or at least apart from imaginary points of reference. It is merely a habitual illusion that objects are more visible and audible than relations. The only justification for this prejudice is that it is usually more practicable to pay attention—in sensory experience as well as in thinking—to terms than to relations. But such everyday impressions happen to be a source of confusion, not of truth, in the analysis of our problem.

Though we have demonstrated that both objects and relations are perceived, nevertheless the two modes of existence are not experienced in an identical manner, especially the space and time 'between'; it is impossible to confuse them. Why?

The answer to this question may lie in the fact that *relations, apart from substance, are inactive.* The beginning and end of all

action is found in relata. We become aware of matter only when it acts. And as long as energy does not act upon some body, it is totally imperceptible. Thus, when light is issued from a luminary body, it is completely inert in transmission, till it strikes a particle of substance. It does not act until there is something to act upon. Action is the basic and exclusive trait of substantiality, though relations often determine when and where the action will take place.

Relations, on the other hand, have never been observed as acting. Nor can they be acted upon. All the familiar contentions to the contrary, such as "all relations qualify or modify or make a difference to the terms between which they hold",[9] are entirely too vague and hesitant to be taken seriously. As G. E. Moore has pointed out, the word "modify" cannot possibly mean "cause to undergo a change", but must "be understood in some metaphorical sense".[10]

Consequently, insofar as action is a basic and exclusive trait of substance, relations should be called non-substantial. We could have described them as 'immaterial', were not the term coined in the days when reality was considered as composed of matter and spirit and used as synonymous to 'spiritual'. But relations are, of course, no more spiritual than blocks of stone.

Insofar as perception depends on some action upon the sense organs, relations are perceived indirectly, through matter and energy. They are perceived as 'where' and 'where-not' of action.

True and interesting as this may be, the inactivity (and non-substantiality) of relations is a negative characteristic. It does not quite account for our ability to perceive relations. What does?

Owing to the crudity of human sensibility, we are inclined to regard most things as continuous. We say that they have length, surface, bulk, and never imagine them otherwise than characterized by these magnitudes. We attribute to some things, such as houses, trees, animals, comparatively stable forms, while other entities, such as air or water, do not seem to possess any definite shape. Most of us are aware, to be sure, of the scientific fact that the continuous extension of objects, that is, of *perceptual relata,*

[9] H. H. Joachim, *The Nature of Truth*, 12.
[10] "External and Internal Relations", *Proceedings of the Aristotelian Society*, XX (1920).

is largely, perhaps wholly, an illusion. Indeed, they are merely local structural systems to which we attribute a certain togetherness, either of natural origin or else imposed upon them by human purposes or sensory limitations. Modern research has shown that the apparent continuities of objects can be resolved into smaller units constituting a hierarchy at the bottom of which stand electrons, protons and the like. This much we think we are sure of; yet there remains a possibility that even the latter are complex entities. It is possible, namely, to imagine that physical reality is infinitely divisible and to arrive, as the ancients did, at the notion of the *geometrical point* defined by Euclid as "that which has no parts, or which has no magnitude". Geometrical points are ideal relata having neither components nor sizes.

But we should not conclude that what is thinkable is also real. That every magnitude, no matter how small, is infinitely divisible in the mind, cannot be doubted, and the concept of the geometrical point is useful as a theoretical limit of all magnitudinal divisibility. However, one should not confuse logic with physics and conclude that objects, too, are infinitely divisible. To assume that the process of subdivision of matter is mathematical, is contrary to facts. Infinitude and indefinitude are intelligible concepts in regard to the mathematical series, but not in regard to physical composition.[11] The only view I can think of as thoroughly consistent and tenable in this respect is that objects are divisible only because and insofar as they are already divided, that is to say, insofar as they consist of physical parts. The ultimate particles of which substance is composed may be electrons and protons (and other similar units), or some even smaller entities, still to be discovered. But whatever these *primary relata* are, they must belong to one of two thinkable types of entities. Either they have no size and are what may be called *punctual atoms*;[12] or they possess size, but are nevertheless indivisible units, partless in the physical sense of the word, in which case we may call them true atoms or, to use Whitehead's term, *primates*.[13] Which of these two possibilities is the true one, cannot be determined at the present moment.

[11] See my "Reflections on Infinity", *The Journal of Philosophy*, Dec. 22, 1932.
[12] The word 'atom' is used here in its original sense.
[13] *Science and the Modern World*, ch. 8.

Whereas all relata are, in the last analysis, atomic, all relations are continuous. In fact, physical continuity, no matter in what manifestation, depends on the existence of relations, just as physical separatedness depends on the existence of relata. The truth is that the world is such as it is precisely because it is both continuous and discontinuous. Objects have perceptual and measurable sizes because they are no mere relata, but are constituted by relations as well. Matter is continuous only insofar as it possesses size and duration. As far as space and time are concerned, they can be reduced neither severally nor in conjunction to atomism of any sort. They contain, to be sure, objects and events; but to say that space (or time) itself is ultimately discontinuous—as maintained, for instance, by B. Petronievics[14]—is equivalent to denying not only its relational character, but also the very existence of physical relations. For how can granules of space be mutually related unless they are found in another, non-granular space in which they occupy position? Or, if space is merely granular and discontinuous, how shall we call that system of distances and intervals in which events appear to be separated one from another? No more intelligible is the view asserting that the relations ultimately produce the relata: the two primary modes of reality are utterly irreducible to each other. As Leibniz said, "the difficulties concerning the composition of the continuum will never be resolved, as long as extension is regarded as forming bodily substance".[15]

We conclude that, being inactive and non-substantial, relations are to be clearly differentiated from relata; and that *relations alone are responsible for the continuity of both objects and intervals among them (in space and time).*

III

The above differentiation of relations and relata makes it possible for us to assert that these two modes of reality cannot be reduced to each other. No relation is a relatum, or *vice versa*, even though we may repeat, in H. E. Bliss's words, that "there can be no entity without relations . . . there can be no relation without relata".[16]

[14] *Principien der Metaphysik*, I.
[15] *Die philosophische Schriften*, Gerhardt ed., II, 98.
[16] "On Relations", *The Philosophical Review*, 1915.

This view is by no means commonplace, as it may appear to be, for it has bearing upon several important issues. It has been, namely, repeatedly maintained that relations must be related to their relata. It all began with Zeno the Eleatic, the master of paradoxes, who, according to Simplicius,[17] formulated the following argument: If space is, it will be in something: for everything that is is in something; and to be in something is to be in space. Space then will be in space, and so on *ad infinitum*. Therefore, space does not exist.

Ingenious as this argument is, it is not without a flaw. The conclusion is clearly false: no one of us will deny that space, as an empirical datum, exists. We cannot accept, therefore, Zeno's major premise: that everything that is is in something. Just as there is no good reason to believe that light is in light, or a stone is in a stone, so there is no good reason to believe that space is in space. Space exists, yet without being in space. There are then realities which exist without being in anything. And such realities are, speaking generally, relations.

Following the bad example of Zeno, numerous thinkers assumed that everything that exists must be related. Since relations undoubtedly exist, they must be related to relata and to other relations. But the major premise is false again. Though it seems plausible that all relata are mutually related, it is not necessary at all to extend the generalization to relations. In fact, such an extension leads us to several pitfalls of speculation.

One of them is that, if we admit that relations are related, then it follows that primary relations presuppose secondary ones, secondary relations presuppose tertiary ones, and so forth—until our wisdom is buried under the debris of speculative 'realities' which no one ever observed, wanted or needed. There is no factual or logical ground for asserting that, whereas relata are only relata, relations are both relations and relata—as they must be, if they are related among themselves.

Another pitfall is even more interesting. There existed an age-long belief that the world must be infinite, because a universal finitude is supposedly inconceivable. It was contended, namely, that the cosmos can have no end, for, even if all the material particles

[17] *Physics*, iv. 562.

are located at finite distances one from another, there still must remain empty space beyond them, some more space beyond it, and so forth. We do not wish to discuss here the problem of finitude *versus* infinitude. But we insist that, if space is relational and if all the material particles are located at finite distances one from another, there is no space of any sort beyond the last particle, for the simple reason that there can be no relation between something and nothing. Thus it turns out that an infinite space lying beyond the boundaries of the material world is even less conceivable than a finite universe, unless we want to resurrect Newton's concept of absolute space that presumably could exist without having anything to do with the known world of relative space or with the objects and events men try to comprehend.

Similarly, it is unintelligible to speak of time spreading beyond the beginning of the world or after its end. Plato was clearly aware of this point, if we are to judge by his *Timaeus;* but most subsequent thinkers were not.

Finally, a brief remark should be made concerning the famous controversy as to whether relations are internal or external, which raged some time ago between the idealists and realists on both sides of the Atlantic Ocean. After years of fervid discussion, the battle of wits gradually petered out, although no solution was reached and few thinkers were persuaded to alter their beliefs one way or another. R. Kagey, in his analysis of the argument, contends that the two basic terms, internality and externality, were "employed unreflectively, simply as terms long grown too smooth by the attrition of constant use to stick even momentarily in the throat of their user".[18] I don't think that the accusation is quite justified. The arguments used by the two sides were not exactly dull; occasionally they were quite clever and subtle, for, after all, such astute thinkers as Bradley, Royce, Russell, and Moore participated in the controversy. So what was the trouble with it?

Let us remind ourselves of Zeno's paradox, as cited above. It was constructed around the premise that everything, including space, must be in space. We have rejected the premise, as most thinkers would. If our conclusion is accepted, however, it follows that no part of space is in space; and as space is constituted

[18] "The Meaning of Relations", *The Philosophical Review,* 1933.

by relations, relations are not in space either. We do not deny that this truth does not seem plausible at a first glance, insofar as it conflicts with our mental habits trained in ascribing substantiality to anything that exists. Nevertheless, unless we are willing to accept Zeno's premise, we must reassert our conclusion: relations are not in space. Consequently, the use of such terms as externality and internality is improper in the analysis of the nature of relations. As long as we confine our thinking to relata and their parts, it is perfectly all right to speak of 'inside' or 'outside'. But the terms do not apply, strictly speaking, to relations. Their function is to constitute the continuity of the world, not to be *in* it.[19]

Our conclusion is that the function of relations is to relate, not to be related. In other words, *relations are related neither among themselves nor to their relata.*

IV

It is generally conceded nowadays that relations do not exist apart from their relata, nor relata apart from their relations. Relations and relata always go together, implying and complementing each other. It may be quite interesting to compare them quantitatively.

A relation is formed by no less than two relata. We should not assume, however, that it is always so formed—which is the unfortunate impression received from the perusal of philosophic literature, even after scholars like Johnson, Whitehead and Russell have explicitly stated that relations may have many terms. "Relations which have two terms", says Russell, "are only one kind of relations. A relation may have three terms, or four, or any number. Relations of two terms, being the simplest, have received more attention than others, and have generally been alone considered by philosophers, both those who accepted and those who denied the reality of relations".[20]

This view is self-evident in application to physical nature. Since no more than one relatum can exist in one and the same place and moment, relations can be formed only by two or more relata. Moreover, relata are the foundation of all discontinuity; conse-

[19] The same argument obtains, of course, of time and of the relations constituting it.

[20] *Our Knowledge of the External World*, 50.

quently, they can be counted—which fact is the original source of mathematics.

But how about the relations? Shall we say that an object consisting of several parts is formed by many relations? How many relations are included, for instance, in a triangular group composed of three points? Three or one?

Let me venture at postulating a highly interesting principle: space and time relations are not subject to counting, for the simple reason that they are not quantitative. The counting is an atomistic procedure applicable, strictly speaking, only to substantial entities. It is improper to count relations, insofar as they are continuities. Only when we treat relations as if they were relata, that is, when we compare them and introduce man-made standard units of continuity—such as mile, foot, year, or second—does real continuity become measurable. The measuring is doubtless a highly useful procedure, an ingenious device of our civilization, well serving scientific purposes; nevertheless, its source is not found in nature herself.

What is the ground for postulating the above principle? A concrete example or two will make it clear. Take an apple and cut it in half. Each half is a unit again. You cut the portion into several pieces, yet each piece is still a unit. You know that each piece consists of molecules and atoms, yet each molecule or atom is supposed to be a unit.

You may conduct the process of thinking in the opposite direction. A room contains many objects, but it is one room. A house has many rooms, but it is one house. A town has many houses, but it is one town. A country has many towns, but it is one country. There are many countries on the earth, but the earth is one. How is this possible? How can many be one, and one many? And how shall we resolve this ancient paradox?

The whole and the parts actually coexist in reality, so that the former, containing the latter, cannot be distinct from them. Unity and multiplicity are both true, though the conventional logicians, when concerned, have no alternative but to brand the statement as an elusive contradiction. If we are to save ourselves from perplexity, we must obviously reconcile the unity and the multiplicity pervading the universe and give them an adequate meaning in our interpretation of reality. How can it be done?

It seems to me that, as long as we retain the substantialistic way of thinking, derived from the habit of emphasizing relata at the expense of relations, there can be no solution of the paradox. But the moment we realize that relations are indivisible and unaddable, that there are no half-relations or double relations, that the inclusion of relata into a higher organization or their reduction to a lower organization does not result in a numerical increase or decrease of relations, but merely makes relationship more complex, then we are well on our way to understanding the paradox.

A relation, being continuous, is always whole, whether you deal with few or many relata. It gives form, but its numerical composition never goes beyond one, unless you consider it in a successive series of abstractions. You may reduce the number of relata and think of one atom, or increase their number and think of one astronomical galaxy. One and many have meaning only in regard to relata, not in regard to relations. You may speak of various relations and pass in your experience from one image to another, but no relation is a multiplicity or a fraction.

The problem is somewhat complicated by the fact that the meaning of relata is adjusted in human experience to man's limitations, interests and purposes. He does not deal as a rule with the ultimate relata of physical nature, whatever they be. A relatum, in his experience, depends on the power of his sensory discernment as well as on his attention. A solar system, a planet, an organism, or a molecule is one or many, depending on what he thinks of at the moment. The apparent atomism of relations, as it is created in the processes of perception, is merely superimposed upon, or abstracted from, the continuity of space and time. But even so the passing from one to many, or *vice versa,* is made possible only by the fact that relations unify or bind, while relata invariably separate.

An organization consisting of two or more relata bound together by a relationship is what we call a *structum.* A structum is not really 'independent' of the rest of the world. It is not true, except psychologically—to quote a contemporary writer—that "the whole is independent in the sense that its meaning and its functioning do not require the positing of factors other than its own. Negatively independence is absence of dependence, positively in-

dependence is self-dependence. The degree of independence possessed by different wholes varies greatly".[21]

All structa are psychologically segregated situations, or, to use H. Levy's term, *isolates*. "We are always interested in a bit of a wider situation", says he; "that is one of our characteristics in thinking; and yet at the same time we are well aware that the situation is itself a bit of the universe. We are always mentally isolating bits of bits from a universe in which each thing or group exists always within a wider group".[22] In other words, it is the nature of man's mind which is responsible—through his interests and attention—for the paradox of the one and the many. Relata are doubtless many. But relations are always whole; they tend to "fuse together", no matter how many relata you are willing to include into an isolate. Consequently, when you stress relata in your experience, you have many; when, on the other hand, you succeed in isolating a bit of reality and stress relation, you have one. Thus, depending on what you emphasize, separatedness or structure, you have one or many in what is essentially the same.

The simplest imaginable structum is the *geometrical line*, standing for a relation between two points, abstracted from the universe. We should not be misled, however, by this simplification and ascribe to the geometrical line the qualities of a real line, its sensible substitute. For spacial relations, being necessarily imperceptible apart from their relata, can hardly bear any resemblance to a visible line (or any other visible figure). We grant that it is in a way natural for men to ascribe a certain 'straightness' to simple relations; and they are also justified in referring to such relations as lying 'directly between' two points, insofar as the comparison to a curved or irregular line would suggest the existence of numerous relata characteristic of more complex structa, whereas a straight line does not convey this impression and is, therefore, a more suitable choice for visualization. But all these expressions are, in the last analysis, nothing but analogies serving the purpose of facilitating human understanding as long as they are not taken by scholars themselves to be descriptive of real properties of the simple relation.

[21] Y. H. Krikorian, "The Concept of Organization", *The Journal of Philosophy*, Feb. 28, 1935. [22] *A Philosophy for a Modern Man*, 30.

We often hear people saying that two towns are separated by a certain distance; or that they are connected by a railroad. The phrases are, I suppose, sufficiently meaningful in everyday language, although in many instances either of the words could be used with equal success, depending on the context of ideas. A distance or an interval may connect as well as separate. However, to do justice to the concept of relation and to disperse some prejudices springing up out of the uncautious use of descriptive analogies, we must emphatically state that relations neither 'connect' nor 'separate': they are, apart from human purposes and habits, neutral or, to use H. Lanz's expression, "transparent".[23] Thus, if we take four points lying in the same dimension, like this . . . . , we can bridge them by imaginary lines, thereby creating, for instance, the impression that the two left and the two right points are 'connected', while the two middle points are 'separated' and constitute a gap between the lines. Such and similar interpretations are, of course, arbitrary; or, rather, they depend on the underlying motive. When we perceive the common elements of two relata, we feel that their relation connects them; when we notice their distinction, the relation separates them.

The concept of transparency of relations, simple as it is, is highly important also in another respect. It enables us to comprehend that relations among parts of an object (say, a house) are essentially similar to those among objects (say, between two houses). In fact, it was a gradual clarification of this idea that led, first, to the formulation of the Cartesian doctrine of the extensive plenum, then to the Newtonian theory of absolute space and time, and finally to recent speculations of Minkowski and Einstein concerning the space-time continuum.

The isolation of structa cannot be explained, however, by motivation alone. Perception has also a physical basis. It depends largely on the specific structure of the surrounding world. Nature is unevenly organized. Some places are almost devoid of matter, while others contain great and more or less enduring concentrations of particles, perceived as objects and events. These objects, organisms and formations can be called, therefore, *natural structa*.

[23] "Some Descriptive Properties of Relations", *The Philosophical Review*, 1931 (two articles).

Natural structa—or, for that matter, all physical relata—are comparatively unstable. They move from location to location and also undergo qualitative changes. As a result, the relational aspect of structa, as given in sensory experience, can be and constantly is transformed in the processes of becoming; indeed, all motion is accompanied by the modification of spatial relations (in time). The pecularity of the change in relations is, however, that, being inactive, they cannot cause it: it is as it were a by-product of bodily motion and interaction. The source of all change lies in the relata, in the substance that acts and is acted upon.

Our conclusion is that *relations bind the multiplicity of relata into the cosmic structure, and only perceptual isolation makes it possible to discern separate structa.*

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THE CARTESIAN DEFORMATION OF THE STRUCTURE OF CHANGE AND ITS INFLUENCE ON MODERN THOUGHT

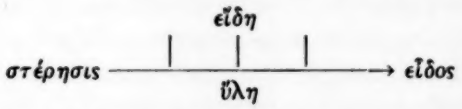
IT IS commonly held that time and change are in some sense problematic for us. This paper is an attempt to arrive at an understanding of why this is so. It falls into three divisions: (I), the classic description of the phenomena of change (Aristotle); (II), Descartes' view of change; (III), the influence of Descartes on the modern conception of change. Throughout the paper, change is taken to be a 'philosophic fact' perceived in every area of existence open to us. Limits of space demand conciseness of treatment. We must restrict ourselves, therefore, to the basic phenomenon, without attempting to work out subordinate detail. Many border problems must be left untouched. In spite of such limitations I believe that a critical review of the major outlines of the traditional theories of change, if adequately performed, has much to contribute to contemporary philosophical issues. The present paper is written in the hope of calling forth more intensive and elaborate studies of this basic problem so widely and inarticulately emphasized, but so seldom treated with any careful attention to what has been done in the past.

I. *Aristotle and the Classic Description of Change*

(*1*) *The General Structure of Change.* Change in the broad sense, or mutation, is a universal fact. The stone falls, the river flows, the brick is heated by the sun, the soil is moistened by the rain, the acorn grows into an oak, timber and stone are built into a house by the architect and his assistants, color is perceived by the eye of the animal, and the student is led by his teacher to know a theorem which he did not know before. These are instances of change or transformation (μεταβολή). What is the basic structure common to them all? In accordance with the principle that it is wise to proceed from what is better known to us (γνωριμώτερον ἡμῖν),[1] though perhaps less intelligible by nature (ἧττον γνώριμον φύσει), let us start with technical transformation, where all the factors are under control.

[1] *Phys.* 184a 16; cf. *Meta.* 1029b 4.

The rough lumber in the carpenter's shed, for example, is made *into* a chair. As lumber, it is actually neither box, stool, bed-frame, table, nor formed utensil, though it is the "stuff" (ὕλη) out of which any of these *might* be made. It is potentially all of these, actually none. In becoming a chair, one of these



potentialities is actualized, and others eliminated. The timber in its "rough" state (στέρησις) is prepared and smoothed, sawed into certain lengths, fitted and nailed together, painted and polished. After passing through these several discernible phases (εἴδη), which are left behind, the wood becomes a chair, that is, something (τόδε τι), here before me (τόδε) of *some* sort (τι)—namely, with back, and legs, and seat for one person. The wood, or matter, *endures* throughout the change. This is one aspect of the structure. In the change, however, a certain phase (the "rough" state) is eliminated or left behind, and displaced finally by the form (εἶδος). The whole (τὸ σύνθετον) neither remains the same, nor is it displaced, but rather changes or moves from the "rough" state into the formed or finished chair.

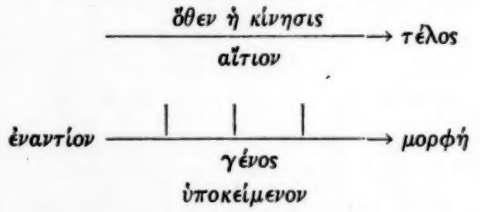
All change is of an underlying matter (ὕλη) which is transformed. Each *thing* we can identify is not only the matter out of which, but the order or structure to which it is transformed. Aristotle presents an account of this general structure of mutation (πᾶσα γένεσις) in the *Physics*, Bk. I, Ch. VII.[2] For example, mud is not only soil, capable of being moist or dry, frozen stiff or melted, but *moist* soil, existing in a certain form to which it has been brought by rain and dew. The river is not only the continental water-shed, capable of being moulded this way or that, but already brought *to* a certain stable structure of main valley and sub-valleys by atmospheric action. The oak tree is now in a phase to which it has been brought out of its seed. The eye, capable of perceiving the normal range of the spectrum, is now perceiving green. The understanding, capable of knowing this or that, is now learning this particular theorem. All change is

[2] Cf. also *Meta.* Z, Ch. 7.

from matter, which is relatively vague and potential, to form (*μορφή*), which is relatively definite and actual. Thus form also, in addition to matter, is an *intrinsic* cause of transformation (*αἴτιον ἐνυπάρχον*).[3]

But things do not change of themselves. The wood does not turn *itself* into a chair. It must be transformed *by* the carpenter. In addition to the intrinsic causes, the matter "out of which" (*ἔκ τινος*), and the form "into which" (*τι*), we must, therefore, add the extrinsic cause *by* which (*ὑπό τινος*).[4] In the case of the chair it is clear that this extrinsic cause has two aspects. There are, first, the motions made by the carpenter in planing, sawing, nailing the wood, and caring for its preservation once it is made. These motions precede the various phases of the wood-becoming-chair. They determine the process of becoming, and maintain the form once it has become. They make up the determining cause (*ὅθεν ἡ κίνησις*). But this cause must itself be determined. It must *tend* to the production of a *chair*, *not* a table or a bed. Otherwise it could not realize its end. This end exists in the understanding of the carpenter as the final cause (*τίνος ἕνεκα*).

Our knowledge of nature is so inadequate that we can do little more than discern a small part of the causal structure in this or that process. Nevertheless the general structure of natural process may be seen to be the same. The stone, for example, is heated by the sun. It *can* be heated or cooled, and holds itself



open to all these phases, though it can realize only one of them at a time. *Now* it is cool. Through the action of the sun it is brought into the phase of "hot" (*μορφή*). The privative phase (*στέρησις*) is eliminated or displaced; as in the case of the chair, it passes away. It is a ground of the *becoming*, not of the *being*

[3] *Meta.* 1070b 22, 1013a 19.
[4] *Meta.* 1032a 13.

of the hot stone. It is annihilated by its opposite (*ἐναντίον*). The hot stone *which* becomes is first, matter (*ὕλη*), second, form (*μορφή*), brought about by, third, the efficient action of the sun directed by, fourth, further causes involving the cosmic order as a whole (*φύσις*). The structure is the same, though far less well known to us.

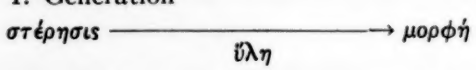
Something in nature, open to a whole range of phases (*γένος*), but existing in only one, is brought to another phase, which it *was* not before. This first, privative phase is displaced by the form; the matter or substratum (*ὑποκείμενον*) remains. The whole thing (*τὸ σύνθετον*) becomes—the hot rock changes. Furthermore, the natural change is brought about by an extrinsic cause which acts or tends in a determinate manner, towards something (*τέλος*) to produce a final result (*ἔργον*). The soil is moistened by the rain, the valley worn down by the decomposing action of the atmosphere, the acorn developed by the intrinsic, organizing power of the plant in connection with environing agencies of soil, atmosphere and sun. The eye is brought to perceive green *by* the actual green color on the leaf, and so on. The brick is heated *by* the sun, cooled again *by* the evening breezes.

In things made by art it is possible to identify the matter out of which, the form to which, the efficient action *by* which, and the end determining this tendency. In natural processes our knowledge is far less adequate. We perceive regular effects and gain a dim sense of the operating agency here or there. The brick is cooled by the ocean breeze, which is due to the cooler, heavier air flowing in from the sea, which is governed by the motions of the earth and the heavenly bodies in concatenation. For the most part, our knowledge of natural processes goes little further than this. Where we can artificially reproduce certain conditions, we gain a quantitatively more exact knowledge of certain measurable aspects of nature. Here and there, little areas of causal action are illumined. But we cannot penetrate very far into the sources of actual motions without simply referring to astronomical or physical constellations as they are—the *φύσις* of the ancients. That they act in regular ways upon myriads of secondary agents, acting in their turn upon myriads of further subordinate agents, is witnessed by our use of such terms as acci-

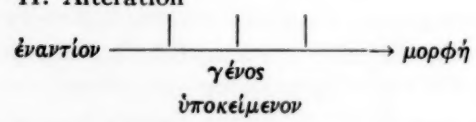
dent and chance to refer privatively to unexplained, or perhaps inexplicable deviations from the general, causal order which prevails for the most part (*ἐπὶ τὸ ποπύ*). Beyond the fact that every change in a certain matter is transformation *by* action tending toward something determinate, we cannot go.

(*2*) *The Kinds of Change.* So far we have concerned ourselves with the structure of change in general (*κίνησις*). We have said nothing of the different *kinds* of change. One such distinction is of peculiar importance. It has become deeply engrained in our common understanding of the world, and in the structure of our ordinary speech. One type of change involves the emergence of a "thing" or "substance" not there before. Thus the chair is made "out of" wood, and the animal is generated by the parent forms. This emergence of a "new" substance was termed *γένεσις*, or generation, by Aristotle. In our own language we refer to it by such phrases as "the wood was *turned into* a chair," or "made *out of* wood"[5]. We distinguish such change from that apparently *less*

I. Generation



II. Alteration



radical type in which a substance, already existing, is merely altered or modified. Thus we do not say the cool stone was turned *into*, or *out of* a hot stone, but simply "the stone became hot", recognizing the persistence of a single substance *underlying* the change. Of course even generation is out of a matter which persists or underlies. But we neither say that "the wood became a chair", nor that "the man became *from* or *out of* the youth". In the former case, we indicate that a *new* substantial form has been imposed *on* the matter out of which. In the latter case, we indicate, on the contrary, that a single substance (not merely matter) has persisted *under* an alteration. Thus what we call thing or substance is a specific route of change, remaining

[5] Cf. Aristotle, *Phys.* Bk. I, Ch. 7.

what it is in spite of contrary oscillations.[6] The disturbance of such an underlying route, with the dissolution of substance into matter, or the origination of new substance is *becoming* proper: the passing away (φθορά) of the one; the generation (γένεσις) of the other.

Change in general (μεταβολή) is either the emergence of something (τόδε τι), out of matter, or mere alteration of what is already there. Two general classes of things are to be distinguished: (a), those generated by nature (τὰ φυσικά), and (b), those generated by art (τὰ κατὰ τέχνην). Of these, the former, through their greater stability and independence, are regarded as substances in a stricter sense.[7] This is because substance is what can preserve its specific nature throughout change. Hence natural things or substances are classified according to the types of change peculiar to them.[8] The more changes a "thing" can endure without changing the higher it is in rank. Among natural substances the following are distinguished: (1), physical things proper, which sustain only locomotion (φορά); (2), physico-chemical things such as the elements and their compounds, which sustain locomotion and alteration (ἀλλοίωσις); (3) plants or growing things which endure locomotion, alteration, and growth (αὔξησις); (4), animals which endure locomotion, alteration, growth and activation (ἐνέργεια) in the form of perception; and finally man, who endures not only all the above types of change but insight (νοῦς) as well. Only the simpler natural substances (1 and 2) can be generated or destroyed by human art. For the most part we can only observe and measure certain changes to which they are subject, and correlate them with certain measurable aspects of their causes. The further subdivision of these changes lies beyond the scope of this paper. We must be content with the major types described by Aristotle: (1), locomotion or change of place (κατὰ τὸ ποῦ),[9] sometimes called κίνησις; (2), qualitative change —hot-cold, white-dark, etc. (κατὰ τὸ ποιόν); (3), growth and decline (αὔξησις-φθίσις); (4) activation (ἐνέργεια). Of these, only the last requires special comment.

[6] *Categ.* 5, 4a 11; cf. 3b 24.
[7] *Meta.* 1043b 21.
[8] κινήσεως καὶ μεταβολῆς ἐστὶν εἴδη τοσαῦτα ὅσα τοῦ ὄντος, *Phys.*, 201a 8. τοσαῦτα ὅσα τοῦ ὄντος, *Phys.* 201a 8.
[9] *Phys.* 192b 14.

In physical change (κίνησις), as we have noted, one phase (εἶδος) displaces another (ἀντικείμενον) which is eliminated or left behind. The body, now at *b*, is no longer at *a*; the leaf, now brown, is no longer green. Certain types of change (ἐνέργεια), however, do not thus proceed from one phase to another. The form does not displace its *opposite*, but rather fills a place already thoroughly prepared and waiting. Thus the earlier phases of the growth of a plant are not simply annihilated as the form is realized. The preceding phase endures through the next as its substrate (ὑποκείμενον). Thus the growing organism is no mere composite (σύνθετον) of substance and accidents. The plant is not something in which growth takes place. But the plant itself grows. It *is* its growth, each stage being substance for the next. The flower does not displace the bud. It *is* the bud, realized and perfected. Such realization, without the elimination of antecedent phases which occurs in physical change, Aristotle termed activation (ἐνέργεια). It constitutes the basic distinction between the inorganic and organic realms, its major types subdividing animals from plants, and man from the other animals.

To pursue these subdivisions in further detail is beyond our present purpose. We must merely note that in perception, which is peculiar to animals, there is the same maintenance of a balanced structure throughout the process, characteristic of all activation. It is true that we see now this, now that, but the function is "all there", being exercised as a whole or not at all. Hence, as Aristotle says, to see and to have seen are all one.[10] To see is thus not to move on (κίνησις) toward a further end. The action constitutes its own end.[11] It does not achieve a product external to itself, as the house built by the builder, but it is its own work (ἔργον). The work achieved by seeing (ὅρασις) is simply to see. Hence such a function does not realize anything other than the thing itself, as the action of the potter is *in* the vase. The actual seeing, on the other hand, is *in* that which sees, the understanding *in* that which understands.

There are, therefore, *two types* of activation *in general* (ἐνέργεια

[10] ὁρᾷ ἅμα καὶ ἑώρακε *Meta.* 1048b 23.
[11] *Meta.* 1048b 22.

ἐπὶ πλέον); one, *pure* activation (ἐνέργεια) bears its end and substrate within itself; the other, *mobile* activation (ἐνέργεια κατὰ κίνησιν), is moved towards an external end by some external cause. Wherever there is *pure* activation, there is a certain degree of autonomy or self-dependence. Thus no external power can *make* the plant mature and ripen save the plant itself. No external agency can make a man perceive or see. As we say, he must see for himself. Nevertheless, both these forms of activation are *conditioned* by processes beyond the direct control of the organism. The plant cannot grow *without* the co-operation of various agencies at work in the soil and atmosphere. The eye cannot see *without* the stimulation of the retina by light proceeding from the colored object. Such activation is thus partially conditioned and realized *out of* motion.

There is one type of activation, however, understanding (νοῦς), which is wholly non-kinetic or non-physical in character. This faculty has to be prepared in the *process* of learning by all sorts of motions and alterations,[12] but when it is so prepared and actually exercised, it is independent of all extraneous influence, realizing itself in itself and through itself alone, being its own substance, its own efficient cause, nature and end. Far from requiring any external condition for its exercise, as perception, any such alien influence acts on the understanding as prejudice, and deforms or corrupts it. Understanding cannot be brought about *in* anything other than the understanding itself (being its own ὑποκείμενον). Its nature and end are simply to realize and perfect itself.[13] They do not lie beyond. In spite of the fact that we never find it fully perfected, understanding constitutes the purest form of activation (ἐνέργεια) which is directly known to us.

(3) *The Major Principles of Change:*

(a) *Each thing is moved by another thing in one single motion.*

Several important conclusions follow from this description of the basic phenomena of change. First of all, motion (κίνησις) is always between *two* separate substances. Nothing *moves* itself, though it may be self-*activating*. This is perhaps the most important respect in which Aristotle improved upon Plato's many

[12] *De An.* 417a 30.
[13] *De An.* 417b 7: εἰς αὐτὸ γὰρ ἡ ἐπίδοσις καὶ εἰς ἐντελέχειαν.

suggestive descriptions of motion and generation.[14] Motion is always the action of an agent (κινοῦν) upon a patient (κινούμενον). The agent by itself is able to act (κινητικόν); the patient by itself is able to suffer (κινητόν). Thus the ball in motion is *able* to move the ball at rest, and the ball at rest is *able* to be moved. As potencies, agent and patient are two separate entities. But the actualization of these potencies is *one single motion—viz.*, the motion of the ball previously at rest by the *other* ball already in motion. The sun, which is able to heat, is one thing, the brick, which is able to be heated, another. But the actual heating of the brick by the sun is one single change, *not two*, as we are so apt to suppose in speaking of cause and effect. Cause and effect are two in *potency*, one in act: this is the first important principle of change. It is *one* motion which can be read in two ways, as the line a——b is one, though it can be read in two ways, either ab or ba.[15]

(b) *The single motion so caused is in the patient.*

Furthermore, this change is *in* the patient, *not* the agent (ἐστὶν ἡ κίνησις ἐν τῷ κινητῷ).[16] The motion of the one ball by the other is *in* the ball which is moved. The heating of the brick *by* the sun is *in* the brick, not the sun. Indeed, we can see that this must be the case, since otherwise, if the agent itself moved *as* agent, it would be moving not another thing but itself, which is strictly impossible. Of course the agent may happen to move in another connection, but this is accidental or irrelevant to its own active agency. *As* active, it moves not itself but *another*. As cause, it reaches out beyond itself, effecting itself in another which is affected by it. Both cause and effect are one single motion or change *in* what is effected. The action of the builders is in the house being built. The action of the teacher on the student is *in* the student (*i.e.*, his learning). The teacher remains fundamentally unchanged throughout the process. The power to move and the moving power are the same, but the ability to be moved, when actualized, is *change*, or motion *in* what is moved. This is the second important principle of change.

[14] Cf. *Theaet.* 153–158, 181c–183; *Rep.* V, 478e–480; *Phaedrus* 245c–246; *Laws* 893–900.
[15] *Phys.* 202b 10 ff.
[16] *Phys.* 202a 13.

(c) *This single motion embodies a two-fold order, causal and genetic.*

There is one motion in the patient, but it may be read in two different ways, as we have seen. This one motion is (1), the "being acted on" of the patient, and (2), the "acting upon" by the agent. As Aristotle puts it "the being" is distinct.[17] The single motion, one in number, *is both* the passion or effect in the patient, and the action or cause by the agent. There are, therefore, two orders of motion,[18] the genetic order (ἀριθμῷ),[19] in which each substance may be traced *back* to the individual matter out of which it emerged, and the causal order (τῷ εἴδει),[20] in which it may be traced *ahead* to its active sources. This is the third essential principle of change. For instance, my acts may have the following genetic history: I put on my hat, go out the door, move three blocks to the right, enter a house, confer with a doctor, subject myself to a certain treatment, regain my health. Causally, however, it must be read in the reverse order: the good which I desire requires health, health requires a certain treatment in my case, this treatment requires a doctor at once, the doctor lives in a certain house, this house is three blocks to the right, this requires going out, and going out requires a hat. These are not two acts, but one act carrying two orders within it, the genetic motions, and their causal structure. Each motion, though one in number is, therefore, dual in structure. Genetically the egg is first, and *then* the hen. Causally, the hen is first, and then the egg. But the life and growth of the chicken is one. Which is *really* before the other? Which order is prior? Which is first, matter or form?

(d) *The causal order is prior to the genetic order.*

Aristotle answers this question in Book θ, Ch. 8, of the *Metaphysics* in a well-known passage. Activation (ἐνέργεια) is prior to potency (δύναμις) in understanding (λόγῳ),in time (χρόνῳ), and

[17] τὸ εἶναι: *Phys.* 202b 9.

[18] *De Part. An.* 646a 35: τῷ μὲν οὖν χρόνῳ προτέραν τὴν ὕλην ἀναγκαῖον εἶναι καὶ τὴν γένεσιν, τῷ λόγῳ δὲ τὴν οὐσίαν καὶ τὴν ἑκάστου μορφήν.

Here "time" means the genetic order as it is perceptually apprehended, not time as it actually is. Thus when speaking of time in *this latter sense* Aristotle sometimes says that the actual is prior to the potential even in time. Cf. 1049b 11, and 431a 2.

[19] *Meta.* 1049b 19.

[20] *Meta.* 1049b 18.

in substance (*οὐσίᾳ*). This is the fourth principle of change. It is prior in understanding, since the capacity is a capacity *to actualize*. Thus the ability *to* build can be understood only from a prior understanding of building *in act*. We recognize a capacity only in the light of that actualizing for which it is only the potency. With respect to time it is true that if we regard *only the individual motion*, the seed comes before the mature plant, and the ability before the actual exercise of a function. But the motion did not actualize itself. There were other individuals, already *in act* and similar in form (not in number), which pre-existed in time. Thus the seed was brought forth by a mature plant already grown. An "ability" is developed by actual exercise either of the same function or others by whose action it is initiated, as tennis may "bring out" a quickness of sight. Man is generated from man, and the cultivated from the cultivated.

Form of any sort can be actualized only by some pre-existing form. The real substance is not the "first" potential phases but the fulfillment, which is what the thing really *is*. We do not think for the sake of the capacity to think, but we have the capacity in order to think. Substance lies in the act itself, or the work that is done, *rather than* in a preliminary phase. In general, act is more substantial and hence prior to potency. The less potency a thing has in its nature, the more substantial it will be. In this causal order, "one activation precedes another until the first mover is reached".[21] In the genetic order, on the other hand, the "final" act is numerically later. The very same process can be read *from behind*, as an evolution from what was materially previous, or, depending on our knowledge, *from ahead*, as the efficacy of a devolving act, formally previous. This latter reading, though harder to *know*, is truer to the nature of things, for, in the order of *being*, actuality is prior to potency.

(*4*) *The Basic Structure of Motion.* We are now at last in a position to understand the nature of change (*μεταβολή*). It is *in* the patient as something suffered passively. Is it then a mere "effect"? We speak of the stone as "being heated", it is true. But we also speak naturally of the stone as "becoming warm", or "growing warm", as though this were a "doing" or "realizing"

[21] *Meta.* 1050b 4.

on the part of the stone. The "confusion" of the passive with the active in ordinary speech is a noteworthy phenomenon. Thus "to suffer" is itself an active verbal form. Is this really a confusion? It all depends on how we interpret.

The stone becomes warm. It is in a certain phase. The phase-content comes from the sun, but this phase also belongs to the range of phases to which the stone is by its nature *open*. Something of a different nature, say a man, would not be open to such a phase. As we say, he becomes warm in a *different way*. The warming of the stone is thus a fulfilment, or realizing in the wide sense (*ἐνέργεια ἐπὶ πλέον*), of something inherent in the stone. But the fulfillment is never complete. Motion is imperfect actualization (*ἐνέργεια ἀτελής*).[22] The stone is always open to further phases. When warm it *can* become cool; when cool it *can* become warm again. Even though "held" in the phase of warmth, it is being eaten into by potency, and still "on its way to" what lies beyond. Motion (*κίνησις*) is thus realization (*ἐνέργεια*), but of a certain special type (*κατὰ κίνησιν*).[23] What is realized is not the pure form as such, but the material potency *of* the form. Hence the famous Aristotelian definition: Motion is the realization of potency *as such* (*ἡ τοῦ δυνάμει ὄντος ἐντελέχεια ᾗ τοιοῦτον κίνησίς ἐστιν*).[24] The realization of what is *not* potential, but really actual, is pure activation (*ἐνέργεια*).

II. *Descartes' View of Change*

(*1*) *The Structural Deformation of Change.* As Aristotle had pointed out, the mathematician regards things apart from motion.[25] Hence it is not surprising that the application of mathematical method to nature should really deprive it of motion. Descartes found Aristotle's definition of motion as "the actualization of the potential as such", hopelessly unintelligible[26] and even contradictory.[27] A thing must be either the distinct actual

[22] *Phys.* 201b 31 f.; cf. *Meta.* 1048 b 29.
[23] *Meta. θ*, 1046a 2. [24] *Phys.* 201a 10. [25] *Phys.* 193b 34.
[26] Descartes, *Oeuvres*, Adam and Tannery, IV, 426, 16–20. . . . at vero nonne videntur illi verba magica, proferre, quae vim habeant occultam & supra captum humani ingenii, qui dicunt *motum*, rem unicuique notissimam, *esse actum entis in potentia, prout est in potentia?* Quis enim intelligit haec verba? Quis ignorat quid sit motus? & quis non fateatur illos nodum in scirpo quaesivisse? Cf. II, 597, 26; XI, 39, 4–13.
[27] IV, 697, 26. Quantum ad definitionem motus, liquet eam rem, quae dicitur esse in potentia, intelligi non esse in actu; adeo ut, cum quis dicit *motum esse*

thing that it is, or nothing. The method of clear and distinct ideas at once rules out all potency and vagueness from the world, and, as a consequence, the lot accorded to motion is no less drastic, though partly concealed by the continued employment of the term.

Motion for Descartes is not the emergence from potency to act, but a *state*. It does not have the structure of from-to, but is a fixed mode or quality, like figure[28] which is either present or not present.[29] Motion, of course, can be thus regarded as a "mode" or quality[30] of a body *after* it has happened. But then it is no longer moving, or going on, and hence not motion at all. To conceive of motion in this way as a "state" is really to misconceive it, and all the unfortunate features of Descartes' theory may be traced back to his youthful inability to understand the Aristotelian descriptions of potency, as mediated by the late scholastics with whom he was familiar.[31] Whatever *is*, is already what it is, and "potential being" is, "properly speaking, nothing".[32]

Descartes continued to use the traditional language of the four causes. He speaks of the material cause,[33] the formal cause,[34] the efficient cause,[35] and does not even *openly* deny the final cause, though he claims that physical motion is explicable without recourse to what lies beyond our ken, and hence rejects

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actum entis in potentia, intelligatur motum esse actum entis, quod non est in actu, quatenus non est in actu; quod aut apparentem contradictionem, aut saltem multum obscuritatis includit.

[28] Itemque diversos modos extensionis sive ad extensionem pertinentes, ut figuras omnes, & situs partium, & ipsarum motus, optime percipemus, si tantum ut modos rerum quibus insunt spectemus. VIII, 32.

[29] Et hoc corpus alio modo se habere, cum transfertur, & alio cum non transfertur sive cum quiescit: adeo ut motus & quies nihil aliud in eo sint, quam duo diversi modi.

[30] *Principiorum Philosophiae*, Pars Prima LVI, VIII, 26, Et quidem hic per modos plane idem intelligimus, quod alibi per attributa, vel *qualitates*.

[31] Cf. Gilson, *Index Scholastico-Cartesien*, especially pp. 187–97.

[32] Cf. VII, 47, 20–21.

[33] Cf. VII, 366, 1–9, where, as a result of his rejection of "potency", he denies that there is *any* perfection of form in the material cause. "Nunquam enim perfectio formae in causa materiali, sed in sola efficiente, praeexistere potest intelligi." This is, of course, equivalent to a denial of matter in the Aristotelian sense, though the *word* is still employed.

[34] VII, 242, 15–22.

[35] For Descartes, the efficient cause becomes the total cause of the thing, really combining into one the Aristotelian material and efficient cause. Thus he says, III, 274, "Il est certain qu'il n'y a rien dans l'effet *quod non contineatur, formaliter vel eminenter, in causa efficiente* & TOTALI . . . " For Descartes, the

any appeal to final causes within this sphere.[36] This clinging to the traditional vocabulary often conceals the fundamental deformations introduced by this "static" view of motion. The Cartesian "moved body" bears some resemblance to the material cause, but this "body" is already essentially what it is before being impelled. Motion is only accidental to "it". Hence geometrical *form* is the ultimate "out of which", and really replaces the material cause. The "impelling body" seems analogous to the efficient cause, but, since it lacks a final cause actually determining it, Descartes views it as "coming from behind".

While temporal priority is not *necessary* to the cause, as he says in his reply to the fourth set of objections, nevertheless the ordinary effects observed by us are not cotemporal with their causes (as is really true of God alone), but follow *after* them in time.[37] This fatal suggestion is closely connected with the elimination of the final cause which *now* determines the efficient cause *to* its effect, for, if the efficient cause is not *now* so determined, it must be assumed that it *was* determined in the past by another efficient cause working from behind. But how can a thing exert causal efficacy when it is no longer there? Descartes was aware of this difficulty[38] but he never extricated himself from it. Thus he often leans toward occasionalism which eliminates all secondary causal efficacy.[39] The radically non-Aristotelian doctrine of an efficient cause working *from* behind was later crystallized by Descartes' followers into one of the major dogmas of "empiricism". Thus Locke assumes that "effects" are "things thus made to exist, which were not there before",[40] and according to Berkeley, "the physicist looks upon the series or successions of sensible things regarding what precedes as cause, what follows as effect".[41] This blunder, originating with the denial of final causes, could have no other conclusion than the scepticism of Hume,

only intrinsic cause is the form; the only extrinsic cause, the efficient. Material cause and final cause are thus ignored.

[36] *Principiorum Philosophiae*, Pars Tertia, arts I–III: VIII, 80–81.

[37] VII, 240, 6–8. Cf. p. 108, 10.

[38] Nam contra non proprie habet rationem causae, nisi quandiu producit effectum, nec proinde illo est prior. VII, 108, 14–18.

[39] As in III, 428, 5–22, where he says: nec video cur non eadem jure dici possit, nullas *iam* actiones esse in mundo, sed omnia quae fiunt esse passiones actionum, quae in prima mundi origine fuerunt.

[40] *Essay* II, Ch. xxvi, fr. p. 435. [41] *De Motu*, Sec. 71.

whose destructive polemic it so clearly underlies.[42] How, indeed, can what is no longer existent "influence" that which is? The "four causes" make up one single structure. To deny final causation, as we see so clearly in Hume, is really to deny all causation. While this consequence is largely concealed in Descartes himself, by his deceptive tendency to use traditional terminology, it becomes evident if we consider his famous treatment of motion in the *Principles*, Part II.

(2) *The Reduction of the Kinds of Change to Locomotion.* With matter or potency ruled out of the physical world, material substance, instead of being regarded as a compound (*σύνολον*) of matter and form, is identified with extension, really an attribute. Hence it is no longer possible to distinguish the generation of one thing "out of" another, from the various kinds of motion.[43] Furthermore, with the final cause eliminated, it is no longer possible to distinguish between the various types of efficient causation (*φορά, ἀλλοίωσις, αὔξησις, ἐνέργεια*). All of these reduce simply to impulsion "from behind". One body may move against another, which is *then* moved against another, and so on. There is no change other than locomotion (*φορά*).[44] Qualitative change (*ἀλλοίωσις*) is banished from nature, and removed to "mind", thus preparing the way for the subjectivizing of nature itself by those like Berkeley who saw at least that *where* the qualitative change took place, there also the locomotion must occur.[45] Growth is viewed as mere accretion, in spite of Aristotle's observation that the latter has no limit, whereas growing things pass through the phases of growth (*αὔξησιν*),[46] acme (*ἀκμήν*) when the limit is reached, and decline (*φθίσιν*).

The failure to distinguish action (*ἐνέργεια*) from the other kinds of motion (*κίνησις*) led to serious difficulties recognized by Descartes himself. An understanding of these may lead us to see why such care was taken by Aristotle to establish this crucial

[42] In the *Treatise*, Bk. I, Sec. ii, Selby-Bigge, p. 76, Hume mentions two relations as "essential to causes and effects". One is "continguity", the other "that of *priority* of time in the cause before the effect". His whole polemic thus simply passes by the classic doctrine of cause.

[43] XI, 39, 23 ff.

[44] Motus autem scilicet localis, neque enim ullus alius sub cogitationem meam cadit; nec ideo ullum alium in rerum natura fingendum puto. VIII, 53, 7–9. Cf. VIII, 32, 7; 33, 28–30.

[45] *Princ.* Sec. 10.

[46] *De An* 434a 24; cf. 432b 25.

distinction.[47] The active power of one thing to act on another, must be distinguished from the passive power to be acted on. Failing to recognize the existence of potency in general, Descartes, of course, fails to focus this distinction, though it hovers over much of his discussion, involved as it is in his primary distinction between the body which is impelled and that which impels.[48] Descartes, nevertheless, has to confess that he is unable to see "how action and passion are distinguished one from the other".[49] Having really eliminated causation from reality, the distinction between cause and effect becomes purely an arbitrary one. What is before us is a single motion, which can be referred to either as active or passive.[50] How can *one* motion be *both* action and passion? Nevertheless, such is the case, and Descartes now views it one way, now the other, but usually chooses to regard the motion as a mere passive "effect". In one range of phenomena this decision led him to radically "novel" results. Vital forms are distinguished from non-living forms in possessing an efficient cause of motion within themselves.[51] But for Descartes there is no such thing as animal motion (ἐνέργεια), distinct from motion externally caused (κίνησις). Animal motion is thus reduced to locomotion (φορά),[52] and recognized as the passive effect of an external agent. Hence animals are reduced to machines.

But it is equally possible, on this basis, to reduce machines to animals, as many of Descartes' modern followers have chosen to do.[53] The distinction between active and passive is purely arbitrary. Hence we may say with equal plausibility either that animals are machines moved by mechanical impulsions, *or* that machines are really animals *moving* themselves. From one point of view any motion moves itself. Hence Descartes sees no diffi-

[47] *Meta.*, θ, Ch. 6; cf. *De An.* 431a 6–7.
[48] VIII, 54, 3–9.
[49] . . . quomodo actio et passio ab invicem distinguantur. III, 428.
[50] Semper enim existimavi unam et eandem rem esse, quae cum refertur ad terminum *a quo*, vocatur actio, quae, cum refertur ad terminum ad quem sive *in quo* recipitur, vocatur passio: adeo ut plane repugnet, vel per minimum temporis momentum, passionem esse sine actione. III, 428.
[51] *De An.* 415b 22 ff.
[52] Qui motum cordis aiunt esse animalem, non plus dicunt quam si faterentur se nescire causam motus cordis quia nescient quid sit motus animalis. III, 455.
[53] Cf. the revival of panpsychism in Whitehead, Hartshorne, etc.

culty in regarding certain machines as spontaneously moving.[54] Physical things *move* just as well as animals. Hence as long as we ignore the causal structure of the motion, it is possible to regard atoms, machines, etc., as self-moving animals. The whole basis for distinguishing life from the inorganic is lost. So we may become either mechanists or panpsychists as we please.

Of course, this idea of a thing *moving* itself runs counter to the Aristotelian principle that "nothing moves itself",[55] later known as the principle of sufficient reason. The animal does not *move* itself. But it may *act* of itself on certain mobile parts, and thus originate motion within itself. But ignoring the difference between motion and action, Descartes is forced to question the dictum that no body moves itself. All bodies may be regarded as passive, *or* as moving themselves, for *once* moving (and a body is either moving or not moving—there being no potential condition *between*), it is moving itself. Thus "there is reason to say that one has fallen into great error in admitting as a principle that no body moves itself. For it is certain from this alone, that a body *has commenced*,[56] it has in itself the force to continue to move itself . . . ".[57] Thus it is necessary to say that "in a certain sense" (quodammodo)" even God causes himself, though Descartes admits that strictly speaking this is a contradiction, which of course it is, as much in the case of a body as in the case of God, for how can something be before itself, or be other than it is? Nothing reveals more clearly the confusion into which Descartes was led by his tendency to regard motion as a finished *state* or quality already there, rather than as the emergence *from* potency to *act*. This tendency led him not only to deny the principle of sufficient reason, but the other basic principles of motion laid down by Aristotle.

(3) *The Deformation of the Major Principles*. We have seen that according to Aristotle there are four supreme laws or principles of motion: (a) *each thing is moved by another thing in one single motion;* (b) *the motion produced by an extraneous cause is one single motion in the patient;* (c) *this motion displays*

[54] Sed ut sponte moveri est genus respectu machinarum omnium quae sponte moventur ad exclusionem aliarium quae sponte non moventur. III, 566.
[55] *Phys.* 258a 2 ff. [56] Note tense—my italics. [57] III, 213, 1.

a double order, (1) *the genetic order from passive potency to act,* (2) *the causal order from active power to act;* (d) *motion itself is the emergence of a patient from potency to act by an agent already in existence, or prior in act.* Each of these is denied by the Cartesian theory.

(a) *Denial of causal efficacy* (*sufficient reason*). There are many passages in which Descartes denies causal efficacy, or the action of one thing upon another. We must be content to take only one such passage from the *Principles of Philosophy*,[58] where motion is *defined* as "the translation" (translatio) of a body from one vicinity to another. In commenting on this famous definition, Descartes says: "translation is not the force or action which transfers"; that is, it is not the action of an external cause already in existence and moving. But "the translation is always in the mobile (or moved) thing, not in the moving thing". In other words, Descartes destroys the distinction between agent and patient in the Aristotelian sense. What is there is one moved thing (mobile), which, so far as it is now moving, is *both* moved and mover. There is no external mover *now* in existence, moving it. No wonder that Descartes elsewhere denies, in so many words, the principle "that no body moves itself".[59] Each body, as moving, both is moved, and moves itself. In so far as this motion is not self-originating, it can come not from another body already in act, but from some body *in the past.*

(b) *The motion is one, and in the patient.* Since the whole Aristotelian distinction of agent and patient is eliminated, it is no longer true to say that the motion is *in* the patient. Indeed motion does not *essentially* belong *in* anything, but is regarded as only a "*mode*", as "figure is a mode of the figured thing or rest of the resting thing". The thing remains essentially what it is, whether in motion or not. Thus *the same* motion can be passed on from one body to another without ever *belonging* to anything.

(c) *Genetic versus causal order.* Since the motion *now* occurring is not being moved by something else *now* existing, it is no longer possible to say, with Aristotle, that "the action is not the same as the passion, but that to which they belong, the motion,

[58] *Pars Sec.*, XXV, 54, 3–5. [59] *Phys.* III, 213, 1.

is the same".[60] It is no longer possible to read the single motion in *two* ways, either causally, or genetically. The causal order, in so far as it is recognized, must be identified with the genetic order. Thus in spite of his admission[61] that nothing "properly has the nature of cause except while it produces the effect" (non proprie habet rationem causae, nisi quamdiu producit effectum), he is forced to admit that all *ordinary* causes precede their effects.[62] Priority is here conceived not as priority of act to potency, but as temporal or genetic priority. The efficient cause of motion now is the body *formerly* moving, "which gives to it of its motion".[63] Hence Descartes often speaks of "the infinite succession of efficient causes"[64] going *back* to God, the initiator of motion[65] who is, in a certain sense (quodammodo), causa sui, or self moving, the first efficient cause. Thus, as in the prevailing conception of evolution, the causal order is identified with the genetic order. The efficient cause is regarded as a force, or élan, or nisus, working *from behind*.

(d) *Inversion of structure.* This conception of motion represents a complete inversion of the classic structure. For Aristotle there is *one* motion which is the actualization of *two* potencies, the active power of the agent, and the passive potency of the patient. For Descartes, the motion is always the continuation of another motion in the past, while the two separate potencies are collapsed into one. The moving body, as it moves, both acts and is acted upon by itself. The one motion is thus multiplied into two, and the two powers reduced to one. As Hume later showed, this is equivalent to removing all causation whatsoever. Descartes himself seems to recognize this, for his definition of motion omits all reference to causation and potency. It is simply "the translation of one body from the vicinity of those bodies with which it is in immediate contact, and which are regarded as at rest, to the vicinity of others".[66] Motion is thus an un-

[60] *Phys.* 202b 20. [61] VII, 108. [62] VII, 108, 10.
[63] VIII, 65, 8.
[64] VII, 106, 16.
[65] VIII, 62, 1. Deus diversimode moverit partes materiae, cum primum illas creavit, jamque totam istam materiam conservet eodem plane modo eademque ratione qua prius creavit, eum etiam tantundem motus in ipsa semper conservare.
[66] VIII, 53, 26.

caused phenomenon—an arbitrary appearance depending on our point of view. One could hardly ask for a clearer anticipation of Hume's sceptical conclusion.

III. *The Influence of Descartes on the Modern Conception of Change*

The extent to which Cartesianism has influenced the whole course of modern philosophy is perhaps not yet fully appreciated. Even more important are the many respects in which it has affected that basic apprehension of the world upon which technical philosophy always rests to a degree, and to which we may refer as common sense. Our constant employment of such concepts as "the mind" and "the body", without any mediating term, such as "life" (anima), is a case in point. Even more significant is the capitulation of modern thought, in the broadest sense, to the Cartesian view of motion as a fixed or simple quality. To realize this we need only turn to the *Essay* of John Locke, on the whole the best compendium for English readers, of common sense philosophical usage.

Locke reiterates Descartes' disdain for the Aristotelian definition of motion as the emergence from potency to act. "What more exquisite jargon could the wit of man invent than this definition? . . . Which would puzzle any rational man, to whom it was not already known by its famous absurdity, to guess what word it could ever be supposed to be the explanation of".[67] Motion involves no *diversity* whatsoever. It is, like figure, a simple, primary quality, which is either there or not there. "These I call original or primary qualities of body, which I think we may observe to produce simple ideas in us, *viz.*, solidity, extension, figure, motion or rest, and number".[68] These "simple ideas" in us exactly correspond to the "primary qualities" without:— "The ideas of primary qualities of bodies are resemblances of them, and their patterns do really exist in the bodies themselves.[69] Hence motion itself is undiverse or motionless, since a simple idea, "being each in itself uncompounded, contains in it

[67] Bk. III, Ch. IV; Fraser II, 34–35.
[68] Fraser, I, 170.
[69] I, 173.

nothing but *one uniform appearance or conception in the mind*, and is not distinguishable into different ideas".[70]

In thus regarding motion as a fixed *quality*, Locke was followed by Berkeley and the whole "empirical" tradition.[71] Since potency is thus read out of the world, and experience atomized into separate and fully actualized qualities, motion is really eliminated, and replaced by its subjective, sensory correlate —succession. Just as Descartes had viewed the world as a "succession", held together only by the ineffable "action" of God, so Locke regards experience as a "stream of consciousness", or "succession of ideas in the mind".[72] According to him, "it is to me very clear, that men derive their ideas of duration from their reflections on the train of ideas they observe to succeed one another in their own understandings".[73] The full account of how "succession", the effect of motion on sense, came to be confused with motion itself, would require many pages. We must be content merely to note the presence of this confusion in Locke, Berkeley,[74] and the whole empiricist tradition.

As a result, there is no real becoming, but fixed, motionless qualities (the after-effects of motion) do succeed one another "in" consciousness. Change thus has to be interpreted as a compound of changeless units with no substance or substratum actually changing. Among the many pseudo-problems introduced by this substitution of succession for change, we must note the aporetic underlying Kant's famous second analogy. Any quality may succeed any other in experience. How then can we distinguish between "the objective connection" (das objective Verhältnis), *i.e.*, real motion, as we certainly do, and mere succession of appearances (Sukzession der Erscheinungen)?[75] Kant answers simply that we *do* make this distinction. Once having abandoned the basic phenomenon of motion, however, the only

[70] I, 145.

[71] Cf. *Princ.*, Sec. IX, " . . . it is evident from what we have already shown that extension, figure and motion, are only ideas . . . ". Cf. *Three Dialogues*, (Everyman), 222 *et passim*.

[72] Bk. II, Ch. XIV, Fraser I, 244: " . . . the constant and regular succession of ideas in a waking man is as it were the measure and standard of all other successions."

[73] I, 163.

[74] Cf. Ecquid enim in se habet successiva corporis existentia in diversis locis, quod actionem referat, aut aliud sit quam nudus et iners effectus? *De Motu*, Sec. 49, p. 518.

[75] Second Anal. *Beweis*.

way of justifying it is to forge a "pure concept of the understanding" to take its place. This is "the concept of the connection between cause and effect, the first of which determines that which is later in time".[76] In this way "causation from behind" became one of the great "synthetic principles" of idealism.

As Hume had pointed out, however, if we do not directly know the motions as such, these too dissolve into mere after-effects, and we cannot without arbitrariness distinguish real change from accident. We can understand succession on the basis of motion. We cannot understand motion on the basis of mere succession. This confusion lies at the root of that doctrine peculiar to idealism, which thinks of motion as a "relation" of before and after. This applies to what *has* moved, after it has moved. *Then*, there is a sequence of before and after. But motion, *as* it moves, is *to* something not yet there in the genetic order, and hence unable to qualify as *the term* of a relation.

The Cartesian view has had its chief success in converting common sense to its own doctrine of "causation from behind". The cause, so far as it can be referred to at all (*cf.* Hume), *precedes* the effect, and forces it into existence from the past. This peculiar and novel way of understanding cause has been very rarely questioned, and underlies the causal theories of most of the modern schools. In particular, it has brought forth the over-simplified conception of "cause and effect", "stimulus-response" "production-product", "force-result" which rules everyday discourse, and the notion of "nisus" or evolution from behind. We must be content to adduce as typical examples of these two notions, the Lockian conception of cause-effect, and the "nisus" concept of S. Alexander.

For Locke, the cause is thought of as a force or power working from behind which brings something into being *not* there before. "Thus a man is generated, a picture made: and either of them altered, when any new sensible quality or simple idea is produced in either of them, which was not there before: and the things thus made to exist, which were not there before, are effects; . . ."[77] Two aspects of this conception are especially noteworthy. In the first place, the effect is viewed not as a motion

[76] Second Anal. *Beweis.* [77] I, 435, Ch. XXVI.

but as an inert "quality". In the second place, the cause, which is pure motion or production, works from behind, preceding its effect. This conception dominates our ordinary view of cause and effect, or blind productivity. *First* there is blind efficiency, then suddenly the passive effect. Nowhere is there anything *that* changes. Hence, as the passage from Locke so clearly indicates, no distinction can be made between generation and alteration. In the one case, as in the other, there is first of all an hypothetical, hidden activity, then a "*new*" sensible quality "not there before". Such a view is no longer a description of the real motions we observe to occur, the generation of an animal by the parents, the heating of the brick by the sun. Instead, we are presented with a succession—first, the quality (cold), then an hypothetical cause not observed, *then* a "new" quality (hot) "not there before". The way is already prepared for Hume.

In the modern conception of evolution, or "spontaneous variation", we find the same conception of blind efficiency from behind. Sometimes it is possible to discern traces of predetermination, or tendency (non-*genetic* determination), in descriptions of the evolutionary force or *élan vital*. But in those who have most thoroughly exploited the concept of self-evoking power, all such traces are carefully eliminated, and we see that what is really meant by evolution is simply the Cartesian view of motion. Thus, Professor Alexander, who has presented what is perhaps the most exhaustive analysis of this concept and its various implications, like Descartes, finds it unnecessary to deal with potency in connection with motion. Together with Locke and the whole "empirical" tradition, he finds that "there is a motion-quality as there is redness or sweetness".[78] Motion is divisible into a set of present *points*, one succeeding the other. "What we ordinarily call motion of a body is the occupation by that body of points which successively become present, so that at each stage the points traversed have different time-values when the line of motion is taken as a whole".[79] As we have already noted, under these assumptions the only interpretation which can be given to causality is the familiar notion of blind efficiency from behind. "All causality", says Professor Alexander, "is *a tergo*".[80]

[78] *Space, Time and Deity*, I, 321. [79] I, 6. [80] I, 287.

On this view the "cause" of the present is motion already past, and the present motion is *now* causing a "new" future not yet existent. "This relation of continuity between *two* different motions is causality, the motion which precedes that into which it is continued in the order of time, being the cause, and the other the effect".[81] Hence we find again the familiar Cartesian conception of a self-moving motion, transferring itself into successive, separable presents. When read backward from effect to cause, it yields mechanism. When read forward from cause to effect, it yields doctrines of "evolution". The confusion underlying both is the same.

Conclusion

The following conclusions are suggested by this study:

(1) When a modern, or contemporary author uses the words "motion" or "cause" he is thinking in Cartesian terms, unless it is carefully specified otherwise. The Cartesian theory underlies both the modern view of "mechanism" in its general sense, and "evolution" in its general sense.

(2) The Cartesian account of motion and cause differs in the most radical form from the Aristotelian account. They are, in fact, irreconcilable.

(3) Hume's critique of "causation" is a critique of Descartes, moving wholly in the field of Cartesian concepts, and has nothing to do with the Aristotelian doctrine. Thus he speaks of motion as a "quality",[82] and makes it clear that "the object we call cause *precedes* the other we call effect".[83]

(4) Aside from Hume's *reductio ad absurdum* of the Cartesian theory, this theory cannot be sustained by a phenomenological examination of the facts.

(5) At the present time, and in the present state of philosophy, Aristotle's account of the structure of change and becoming have for us an importance exceeding that of merely academic or antiquarian study.

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[81] I, 2–9.

[82] *Treatise*, Bk. I, Pt. IV, p. 228: "To begin with the examination of motion—'tis evident this is a quality . . . "

[83] *Treatise*, Bk. I, Sec. XIV, p. 155.

DISCUSSION

ETHICAL EMPIRICISM AND MORAL HETERONOMY: A REPLY

PROFESSOR VIVAS' criticism of my account of the moral judgment, which appeared in the July 1940 number of this *Review*, affords me a welcome opportunity to point out more precisely than perhaps hitherto the source of the evidence upon which my theory of ethical objectivity is based. It is not based upon "the assumption that in order to deserve serious attention the moral judgment must abide by certain objective conditions". On the contrary, it is based upon observation of the workings of the human mind in the act of passing moral judgments. It is not prescription; it is description of the conditions to which the lay mind believes itself to be conforming when it applies the predicates right and wrong to the conduct of self or others. Of course I do not mean that the man in the street carries about with him in his mental kit a set of formulae covering these conditions; any more than I suppose that the boys who cut across the corner of my lawn are saying to themselves: 'A straight line is the shortest distance between two points'. That the conditions in question are real forces, however, may be shown empirically by what John Smith does when in doubt, or when he changes his mind, or by the reactions of other persons to his predications.

In the first place, it is an easily observable fact that when *A* discovers that he has considered a given act right when he was the beneficiary and *B* was the victim, whereas he has called it wrong when *B* was the beneficiary and he himself was the victim, he does not say, 'What of it?'. On the contrary he regards one judgment or the other as incorrect, and as such, subject to modification or dismissal. The moralist merely supplies the generalization covering cases of this kind. This he does by noting that when John Smith calls an action right or wrong he supposes he is looking at it from an impersonal point of view; that is to say, apart from the relation in which he happens to stand to the persons concerned. In this he is supplying little information that is not contained in the formula: What is right for one is right for every one else under the same conditions. This formula is no invention of philosophers. On the contrary it is so familiar to popular thought that you can hear its equivalent even in the mouths of six year old children.[1]

Common sense thus recognizes the existence of such a thing as a mistaken moral judgment. The subjectivist who ignores this fact, and its foundation in real and very important distinctions, thereby shows

[1] *Cf.* Edward Westermarck, *Ethical Relativity*, 90 ff.

that his picture of the workings of the lay moral consciousness is an arbitrary construction, out of touch with its actual nature.

But this is not the only source of what common sense recognizes as mistaken moral judgments. Voluntary action is an attempt to produce or maintain a certain state of things; that is to say, a certain group of effects. An obvious inference, therefore, is that if the judger has an incomplete or otherwise inaccurate view of these effects the resulting judgment may properly be called incorrect. For it is impossible to see how anyone could pass an intelligent judgment upon anything whatever—the qualifications of *M* or *N* for the presidency of the United States, or the quality of Titian's assumption of the Virgin without data representing the nature of the person or thing upon which the judgment is passed. This is what Westermarck means by his distinction between "enlightened" and "unenlightened" moral judgments. Observation shows that this distinction is well recognized by common sense. For any careful study of the causes of the variations in moral judgments will reveal that the leading one is difference of opinion as to the consequences of the act judged; and the great majority of the arguments (with self as well as others) on this subject are directed to the determination of such consequences. Under such and such circumstances may a man lie, break a promise or a contract, help himself to someone else's property, give a dose of poison to a hopeless invalid, make a true statement injurious to the reputation of a neighbor, give money to a street beggar? The decisions both of those who affirm and of those who deny will be found to turn fundamentally upon what are believed to be the good or evil consequences involved. This is no peculiarity of the workings of the American mind, as is demonstrated in detail in that great depository of ethical data—the monumental work of Westermarck's, *The Origin and Development of the Moral Ideas.*

Westermarck recognizes only one set of exceptions to the above generalization. It consists in what he calls disinterested likes and dislikes. These are essentially identical with what I have called aesthetic and antipathetic judgments. Westermarck asserts rather than proves that such judgments cannot be counted among enlightened moral judgments.[2] In Chapter X of my *Ethics* I have attempted to show that where their nature is understood they are not regarded by common sense as moral judgments at all.[3]

[1] *The Origin and Development of the Moral Ideas,* II, 740; 744, 745; *cf. Ibid.* 580.

[2] In view of what is said in the following paragraph I must not neglect to remind the reader that Westermarck defends the principle of retaliation which involves the inflicting of evil for evil's sake. See *The Origin and Development of the Moral Ideas,* I, 73-93; *Ethical Relativity,* 71-86. For my method of dealing with this subject I can only refer to *Ethics,* 134-138. It is worth noting that the existence of lay judgments approving retaliation has

So far I am in essential accord with Westermarck, the only subjectivist writer who has ever taken the trouble to make a systematic and thorough-going study of the moral judgments of the race. But there is one very important point which he has apparently overlooked. Mental vision has two forms. They have been called 'acquaintance with' and 'knowledge about'. The first is given in immediate experience; less completely in imagery, where we speak of it as realization. The vehicle of the other form of knowledge is the concept. But the concept is like a map; it may be accurate as far as it goes, but it does not go very far. Let any of us, especially one who has never seen death invade the inner circle of the family, and has never had to carry crushing financial burdens, read in the newspaper that *A. B.* (whom we have never seen), formerly a clerk in the *X* grocery store, died yesterday after a lingering and painful illness. He was thirty-five years old. A widow and three children survive him. What proportion of the grim and dark realities at which these brief sentences hint, actually enters our consciousness?

Complete knowledge thus involves either immediate experience or realization. A correct, or well founded, or throughly "enlightened" judgment, accordingly, is a judgment identical with that which would follow from a complete realization of the good and evil effects upon all concerned; or, in words paraphrased from Hume, a judgment based upon the real value of the effects of the act to the parties involved.

The correctness of this conclusion can again be verified by a direct examination of the moral experience. Chapter VIII in *Ethics* contains several illustrations of the fact that when conceptual thought is replaced by realization, so that its abstracts are translated into the concretes for which they stand, and the abstracts and the concretes point in opposite directions, the judgment ends by following the latter. This explains many well known phenomena of which I may here note only one; namely, the influence of self-interest in leading us to call an action innocent or sometimes even dutiful when its perfomance by self brings personal profit, and wrong when its performance by another brings us suffering or loss.

Observation shows, then, that moral judgments are regarded by common sense as subject to correction (1) when they fail of impersonality; (2) when they turn on failure of accurate and complete acquaintance with the act judged. But observation also shows another characteristic of the moral consciousness. When two moral judgments contradict each other, or, as I should prefer to say, are inconsistent with each other, it recognizes that either one or the other must be

been denied by some moralists and completely ignored by many others. They doubtless fear that any acknowledgment on their part of such apparently recalcitrant facts would "interfere with the smoothness of the tale".

modified or abandoned. John Smith does not do this because some philosopher has told him he ought to; nor does he do it because of any affection whatever for consistency as such. Whatever the explanation, the fact itself is an empirically observable phenomenon, which can have escaped the attention of subjectivists only because it does not fit into their system. For no small portion of the considerations which John Smith regards as relevant in passing upon a moral situation conform in type to the following rule taken from the Canons of Commercial Ethics, adopted by the National Association of Credit-Men.[4] "No gentleman in business, without a reason that should be satisfactory to the seller, may cancel an order. He would not ask to be relieved of his obligation upon a note or a check, and his contracts of purchase or sale should be equally binding."

What is the significance of this feature of the moral consciousness? Consistency is nothing more nor less than persistency in the application of a principle. Accordingly the postulate that moral judgments must be consistent with each other reveals the fact that beneath all the variations in the moral judgments of the race there exists a single principle, conformity to which is necessary if the moral judgment is to be entitled to the predicate 'correct'. What this principle is we have already discovered. A moral judgment is correct when it applies the adjective 'right' to an act, complete acquaintance with whose nature would evoke impersonal approval. Complete acquaintanceship is of course unattainable here as everywhere else. However incompleteness is no bar, provided we have grounds for believing that more abundant data would not alter the conclusion. This, of course, is a rule that applies not merely in the field of morals but equally in every other department of life. The nature of an act—it should go without saying—is relative to the situation in which action takes place, so that acquaintance with its nature includes acquaintance with the situation.

The application of the above criterion to practice yields, I believe, the standard of universalistic utilitarianism. But since the validity of this standard is not here in question I need not discuss its claims in this place.

It is not every effect of action with which the moral judgment is concerned. The effects must be either good or bad to arouse and to determine the direction of the moral judgment. Accordingly Professor Vivas is quite right in insisting that before it finishes its task the theory of the objectivity of right and wrong must face the problem of the objectivity of good and evil. Here, however, I have space for only three very abstract statements of opinion. (1) Judgments of good, like those of right, must be based on acquaintance with the objects evaluated if they are "to deserve serious attention". (2) Objectivity of

[4] From Edgar L. Heermance, *Codes of Ethics, A Handbook* (1924), 127.

right and wrong involves the commensurability of goods and evils. (3) Granted these propositions, objectivity of right and wrong is compatible with a subjectivistic theory of good and evil. For according to this view, my good *is* what happens to interest me. Whereupon the categories of right and wrong, since they deal with the allocation of goods, become the guides for determining the priorities of competing interests. On any theory of the good, insight into others' good where their good is properly the dominant consideration is a very large part of the function of moral wisdom. Thus when the beloved son returns home from college for his vacation the fond mother serves what she knows to be *his* favorite dishes. On the same principle, when the children leave home "for good and all" wise parents send them checks for their Christmas presents. For then they can have what *they* want. Hence the significance of those virtues which have to do with the acquisition and safe-guarding of money, such as integrity. Hence the significance of freedom—in the family and in society at large. Hence the significance of those moral rules which are calculated to secure the conditions favorable to the preservation of health, physical integrity, and life itself. This is an absurdly inadequate treatment of a great subject, but I have done the best I could with it elsewhere and will not attempt to summarize earlier conclusions here.

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QUALITY, PHYSICALISM, AND THE MATERIAL MODE

DUALISM between reality and appearance looms as a great problem in the history of thought, but today there are those who would relegate such a problem to limbo. The logical positivist criticizes the resultant issues of such a dualism as pseudo-issues, and would have us turn from the tradition to philosophy itself. While he disarmingly asserts, "It is not our business to set up prohibitions, but to arrive at conventions", this principle of tolerance contains the germs of much that develops into hostile criticism. By virtue of shewd logical analysis, roughly describable as hypothetical-deductive reasoning, his criticisms gain power. Logical analysis is here confined to sentences and their consequences. Within these bounds we can easily recognize the play of conventionality in which the principle of tolerance finds its place; and within these bounds, positivism sets the stage for philosophy, which acts in the rôle of clarifier of concepts—a task of no mean importance. But however we define philosophy and to whatever area we confine it, we are still faced with knotty problems of interpreting the relationship of logic to experience, problems which give rise to what I should call metaphysical theses, but which the logical positivist may prefer to call something else. Whatever we call them I should like

to face some aspects of three theses which concern: (1) the interpretation of qualities, (2) physicalism, and (3) the material mode of speech.

I

Logical positivism agrees with older positivism both in its fulminations against theology and metaphysics and in the need for coming to terms with modern science. The preoccupation of the positivist consists in setting forth the procedure of science as the only method of obtaining knowledge, and the logical positivist especially emphasizes the procedure of verification. In his rôle as philosopher the new positivist confines his attention to methodology in science—assumptions, definitions, and implications. At least, this seems justly to characterize the turn which Carnap's statement takes in contrast with Schlick's position that sentences stand for propositions.[1] Carnap is, of course, aware of the limits of syntax and recognizes that the terms 'true' and 'false' depend upon experience or some thing extra-linguistic as well as upon syntax,[2] but there remains a difficulty which we may perhaps refer to as that aspect of science which has to do with confirmation.

From the setting of a problem to its tentative solution, that without which science would be impotent is usually agreed to be confirmation. As an exercise in logic, confirmation may be defined formally, and the resultant definition may be of aid to the scientist in checking up on the validity of his experiment and on the correctness of his conclusions. A formal definition, however, is no substitute for actual observation in a particular experiment. Truth of reason is never a substitute for matter of fact. Scientific observation is confirmed by reading pointers, by noting the blue litmus or the dilated pupil. Although the positivist would probably agree to this, he would demand further interpretation and refinement. If analysis were pushed no further, the end of science would be aesthesis, which for it is meaningless. As Schlick says, "Science is not a collection of factual knowledge (statements of facts) but a system of explanatory knowledge (description by laws)".[3] To insist that scientific inquiry as we know it terminates in observation or direct apprehension is to ignore the complex procedure of interpolating, extrapolating, and above all, systematizing laws. Were this in principle what positivism is driving at, we should perhaps not take exception, but in Schlick's case at least, something much more radical is meant—*viz.* a reduction of qualities or contents to relational structures.[4] He

[1] *Cf.* Carnap, *Philosophy and Logical Syntax*, and his treatment of testability in "Testability and Meaning", *Philosophy of Science*, III, No. 4, Oct. 1936 and IV, No. 3, Jan. 1937. Schlick, *Gesammelte Aufsaetze*, Wien, 1938, pp. 383 ff. Hempel characterizes this development as that from a correspondence theory to a restrained coherence theory. "On the Logical Positivist's Theory of Truth", *Analysis*, II, No. 4, Jan. 1935.

[2] *Philosophy and Logical Syntax*, 47-48.

[3] *Op. Cit.* 200.

[4] "Form and Content, an Introduction to Philosophical Thinking", *Ibid.* 151 ff.

casts the issue in terms of communication; content not only cannot be communicated, but is nothing except structure. ". . . knowledge is a certain set of facts, and . . . my propositions express these facts by conveying to you logical structure and nothing but logical structure".[5] In the assertion 'This is green', green is identified by structure—*i.e.*, by indicating behavior responses, by comparing it with a band on the spectrum, in short, by a host of objective techniques, excluding only the simple process of recognizing the color in experience.

A further complication sets in by reason of the positivist's identification of structure with that which can be communicated. He would speak now of the ***meaning of*** green. For him this is a natural way of putting it, for we cannot speak green; we can only speak about it, indicating its relations to other things. These relations are the facts, the structures—that which is alone truly the object of knowledge. In Eleatic terms, Schlick seems to re-echo, being is that which can be thought of and uttered.

If we assume—and the assumption does not appear unwarranted, either from our point of view or from that of the logical positivist—that science attempts to set up laws, even though they concern only probabilities, then science interests itself primarily in the universal, not in the unique. Thus, concrete experience gives way to assertions of connections, of laws, or, as the positivist would say, of structures. This procedure is not to be lamented; rather it makes for the task of interpreting science, a task which philosophy has accepted at least from the time of Bacon and Descartes. The objectionable is not that science aims at universals, but the failure to perceive that the act of confirming seizes upon qualities.

One fatal slip in the argument appears to be the insistence that structure is independent of content or material. Whereas it may be independent of ***any particular*** sense-experience, it is not independent of *all* sense-experience. The color-blind may verify colors by their intensity; or the blind by tactual, auditory, or other sensations, according to his choice of protocols; but he cannot proceed without some set of protocols grounded in sense-experience.[6] An often-quoted and generally approved statement from Schlick which reads, "Verifiability has nothing to do with any images that may be associated with the words of a sentence in question", may be taken as the thesis for denying the validity of content or material. The ugly demon which lends force to the statement may be the term "associated". Associations may very well be irrelevant to science, whereas the intent of words to refer to content are, quite the contrary, indispensable. Stace has

[5] *Ibid* 160.
[6] *Cf.* Carnap, *The Unity of Science*, 62 ff. Also Schlick, *Op. Cit.*, 208, 209.

argued the point at some length.[7] His position requires only that there be *some* content, a point which the positivist would seem obliged to grant in the light of his insistence upon protocols.

In this connection a word may be in order from an operational point of view, an approach of which the positivists seem to approve, judging by the reverence with which they quote Bridgman. Assuming that meaning can be defined only with reference to operations, Bridgman warns that in science one must not identify (make neither synonymous or equipollent) "tactual length" and "optical length". Even if for practical purposes the identification works well, "it is not safe to forget" that the adoption of a single term is doing double duty and may involve us in difficulties later on.[8] This simple but subtle point has been recognized by the ancestors of positivism at least as far back as Berkeley, a point which he thoroughly emphasized in his theory of vision. Carnap speaks of physical determinations corresponding to qualitative determinations as "physicalizing".[9] He finds the relations between personal determinations of protocols and determinations on other persons by several experimenters as "a fortunate circumstance (an empirical fact, not at all necessary in the logical sense)", and again, "a fortunate but contingent fact".[10] Thus the crux of the argument turns on the thesis of physicalism to which we come presently.

So far the conclusion seems to be only this: if logical positivism would eliminate qualities, it has not succeeded. At most its contentions warrant the following: (1) We cannot speak qualities (which no one would gainsay); (2) Structures are pervasive aspects of knowledge, but, if we are correct, not independent of *all* qualities, though independent of any specific quality; (3) Science is concerned primarily with structures, rather than unique contents (qualities), and positivism would further assert that communication of qualities is impossible. Hence, Schlick's statement which follows is a denial of the intersubjectivity of knowledge. He writes: ". . . the *only ultimate* reason why I accept any proposition as true is to be found in those simple experiences which may be regarded as the final steps of a comparison between a statement and a fact, and which I have spoken of as 'Konstatierungen'—without attaching any importance to the word".[11] Here absolute knowledge is at least theoretically possible without any test of intersubjectivity. Its force is in immediate experience, that of which it would be futile to speak.

This calls in question one more point: the nature of ostensive

[7] W. T. Stace, "Metaphysics and Meaning", *Mind*, XLIV, No. 176, 1935, pp. 433 ff.
[8] P. W. Bridgman, "Operational Analysis", *Philosophy of Science*, V, No. 2, 1938, pp. 121 ff. [9] *The Unity of Science*, 63. [10] *Ibid* 61, 64.
[11] "Facts and Propositions", *Analysis*, II, No. 5, Apr. 1935, p. 70. Italics in original.

propositions.[12] Ostensive propositions as pointing to contents involve on the one hand intention and on the other a referent.[13] Important as this distinction is between the pointing and that pointed to, the logician in his preoccupation with symbols, which are certainly pointers, however elegant and sophisticated, sometimes forgets this distinction and consequently substitutes logical for ontological analysis.[14] Useful as this substitution may be, it leads to the error of asserting that philosophical knowledge is not intentional and that the language of the sciences expresses all that we can know.

II

It is perhaps incorrect to speak of the psychology of logical positivism as behaviorism, although certainly there is a real sense in which behaviorism is espoused. The subtlety distinguishing positivism from behaviorism seems to rest in the former's refusal to entertain a mind-body problem—*i.e.*, metaphysics or mud. Physicalism as regards psychology asserts simply that psychological phenomena may be reduced to sentences in the "physical language".[15] Formerly, philosophy was given largely to speaking of the "causal" language of science and the "teleological" language of human intercourse. Since Descartes, philosophy has become more chary of such a distinction, and many would agree with the positivist that such terminology is misleading. Conforming with advances in modern science, positivism aims at reduction sentences in which cause and effect are treated as conditions and consequences. Teleology is a *modus loquendi,* which is reduced to specialized psychological, biological, and physical analyses. Roosevelt's plea for quarantining outlaw nations becomes the sentence, "R. at such and such a time and place (designated by spatial and temporal coordinates) uttered: '. . . .' ". Or better, "Mr. R. (designated as before) was in such and such a physiological condition, contracting such and such muscles, which were accompanied by motions in the air of such and such an intensity, which set up interference waves of such and such . . . . etc. etc." Curiously enough, with all their insistence upon symbolization and economy of words, positivists are at heart verbose creatures.

Much more crucial is the effect of such reductions upon the intel-

[12] Schlick, *Gesammelte Aufsaetze,* 340.

[13] *Cf.* Cunningham, "Meaning, Reference, and Significance", *Philosophical Review,* XLVII, No. 2, March 1938, p. 158 and *passim;* also Ayer, *Language, Truth, and Logic,* 126 ff.

[14] *Cf.* Nagel, "Verifiability, Truth, and Verification", *Journal of Philosophy,* 1934, pp. 142, 143.

[15] In "Testability and Meaning" Carnap modifies his point of view, so that he now asserts "reducibility of terms, but not—as was done in our former publications—definability of terms and hence translatability of sentences" p. 467.

ligibility of human actions, which are now interpreted without any reference to experience (*Erlebniss*) or to wants directly appreciated. They are described objectively in such a way that insight into sources of action is precluded. Self-knowledge comes to be of no significance until it is translated into a common physical language amenable to the techniques of experimental science. The alternative is not a plea for a self hermetically sealed in its own microcosmic shell, but rather a self which can be understood only as purposes give direction to action. When these are well-grounded in experience, correction proceeds not from a scientific account of connections observed in the past but from insight into new connections based upon past experience, and whose clues appear in the necessity for realizing the purpose. Aid comes not from the psychologist who is versed in objective descriptions of the state of one's neurones, but from the critic who can sympathetically appropriate the purpose and anticipate the procedure by which it can come to fruition. The logic of this procedure gets its drive not from description, but from the nature of the antecedent problem. The scientist surely concerns himself with such a procedure whenever he uses an instrument. He is careful in the choice of his instruments, depending upon the nature of the problem. The crucial factor here is that of relevance, an aspect of scientific procedure which positivism apparently fails to take into account.

The scientist can approach the ideal of universality in scientific law only where his problem is limited and where he has qualified the subject-matter of investigation. Certainly he does not pretend to study nature as such—for then he should have nothing to study. In personal action there is a further refinement necessary, for the question of a future act is not determined by considerations of how all men act, but rather how I should act in this particular situation to achieve a specific result. Actions without intentions are like the one who mounted his horse and rode off in all directions at once. And in logic, from the simplest ostensive proposition to the subtlest proposition in philosophical criticism, I think one may empirically discover intent. Intent, however, can be realized only when the structure to which it points can be verified in experience, the result of which may be called knowledge. The virtue of logical positivism, it seems to me, is an elaboration of the intermediary process. The necessary correction would seem to consist in recognizing the integral connection of the logic of sentences both to the antecedent problem which gives the lie to the type of logic to be used, and to the having of qualities, which confirms the success of that logic.

The difficulties involved seem to follow first of all from a denial of unique qualities. Once these are denied as being relevant to the knowing process, we are left with structures, which like propositional func-

tions, have no meaning apart from content, are neither true nor false. Then we are left with communicability—or perhaps we should say mere talk—for we cannot even communicate structures. They are impotent until one recognizes the green of the book by *observing* the green grass, the green spectral line, the green cheese, etc. A case for content can be made even in mathematics.[16] Communicability is then improperly taken as the warrant for universality, and universality as the warrant for physicalism. Physicalism is then the unction which consecrates the positivist's solemn proposal that from Thales to Hume, with qualified absolution for Locke and Berkeley, philosophy has been one long series of nonsensical utterances. The circle is complete when from physicalism the positivist denounces all theories expressed in the material mode of speech.

III

If logical positivism fails in its account of the relationship of logic to verification, treating observed qualities as if they were logical structures, it also fails in its account of the initial stages of inquiry, where problems are set in crude, macroscopic experience. Here are the provinces of the material mode of speech, whose function is not so much that of framing a proposition which is true or false as of giving a description more or less adequate. Since problems for scientific analysis are not set in a vacuum, much descriptive work must be done before primitive propositions can be formulated. Descriptions are not taken as propositions mirroring facts, but as clues leading us into a universe of discourse, and without which the universe of discourse is unintelligible. In any intellectual discipline it is not uncustomary to begin with an introduction. For in this way alone can we map out an area for study. Even in mathematics this appears true, a fact to which Bridgman refers in what he calls the "text"—that which tells the significance of equations and how to use them.[17] And concerning the formulation of postulates in a mathematical system, Huntington reveals: "Behind the scenes, I must confess, the choice of postulates is not quite as arbitrary as we pretend, since in the back of our minds we have the picture of some concrete example, like the regions in a square, to guide us in our choice! But theoretically all we have to look out for is to be sure that our demands are not incompatible among themselves."[18] Without the text or without the concrete example, work in the sphere of science would be impossible. Concerning the obvious

[16] *Cf.* Bridgman, *The Nature of Physical Theory*, Chs. 4, 5: and E. V. Huntington, "The Method of Postulates", *Philosophy of Science*, IV, No. 4, Oct. 1937, p. 488.

[17] *Op. Cit.*, 59 ff.

[18] *Op. cit.*, 488-489. Also *cf.* J. W. Young *Fundamental Concepts of Algebra and Geometry:* "The only test for the consistency of a body of propositions is that which connects with the abstract theory a *concrete representation* of it" (p. 43). Italics in original.

retort that images and experience are not part of logic, we need only recall that although a logical system may be independent of any concrete example, it is not independent of all. Moreover, if it is further argued that alternative logical systems are not actually applicable to nature, we may suggest that even some positivists are not opposed to "thought-experiments". Denial of the proposition that since logic draws necessary implications it is not definable in terms of experience does not yield the proposition that logic is independent of all experience.

In part, expressions in the material mode involve the point of view and in part the reference to subject-matter. Points of view are not conveyed by unexplained, novel symbols, nor by propositions which mirror facts, for such "mirroring" we have argued is actually pointing. Without intent, therefore, mirroring could only be a dubious replica of reality, creating a situation where dualism is otiose, and making for an unbridgeable chasm. On the other hand, without a stuff to anchor a point of view—*i.e.*, without experience to which it refers and in which it is grounded—the point of view vanishes as baseless emotion. Translation from one language to another can proceed only where there is intended meaning. Professor Carnap would seem to insist upon this when in speaking of translating questions formulated in the material mode he says: "But unfortunately there are several such (formal) translations, and hence I can make only conjectures as to the *intended meaning* of the questions."[19] This may be a slip from his point of view, but quite a necessary way of speaking, despite hot denouncements to the contrary.[20] To be sure, translation is determined in part by rule, but only so far as the rule points to a referent. In translating 'man' to 'homme' I may of course refer to the lexicon, but the lexicon is valuable to me only so far as both terms refer to the thing-man or experience-man. The rule given by the lexicon indicates the arbitrary character of knowledge, which may be of special concern to the psychologist or sociologist. The thing referred to, but not given by the lexicon, points to the experiential or ontological character of knowledge. Where the positivist stands here is not very clear, and especially on the issue of the relationship of syntax to experience.

Carnap insists that we distinguish between real-object sentences and sentences expressed in the formal mode of speech, and points out a third kind of expression—pseudo-object sentences—*i.e.*, those in the material mode. The basal distinction is between analytic and synthetic propositions, in which analytic propositions are given by definition and yield tautologous propositions, whereas synthetic propositions are those which cannot be defined from syntax alone, but must be verifiable

[19] "Testability and Meaning", 430. Italics mine.
[20] *The Unity of Science*, 89 ff.

(confirmable or testable) in experience. Predicates such as 'thing', 'quality', 'relation', 'experience', 'deals with', 'describes', etc are term-designations and must be recast in the formal mode. There appear to be two charges which they press against the material mode: first, the kinds of predicates are pseudo-predicates, which add nothing to knowledge; secondly, there is no way of verifying (or confirming) such predicates. Let us look briefly to each.

If I say 'My pipe is hot', then I have asserted a meaningful predicate. If I say 'My pipe is a thing', I have said nothing, and the sentence must be translated "The expression 'my pipe' is a thing-designation". But what is the difference between 'thing' and 'thing-designation'? The difference seems to be not that between a term which purports to refer to something but does not, and syntactical structure; rather, it is between an elliptical and an expanded term, both of which have reference to context. My pipe as a thing would signify its having relations to other things: lips, teeth, tongue, perhaps to my whole being, as well as to tobacco, table, annoyance to others, etc. By calling it a thing I distinguish it from fancy or dream; and here I fall back upon experiential criteria. The only reason I see that the material mode is definitely unrevelatory is that it is torn out of its context. Hence, it may be reinterpreted within a syntactical scheme, but a scheme which is not itself sundered from experience. To me the positive virtue of the material mode lies in the tacit recognition that propositions have an arbitrary character, and perhaps in the further recognition that some predicates seem to be more easily identifiable than others. Such a claim is vastly different from the insistence that the problem is one of syntax alone.

This discussion anticipates our answer to the second charge: that expressions in the material mode are unconfirmable. In *Philosophy and Logical Syntax* Carnap asserts: ". . . there is no question of eliminating reference to objects themselves from object-sciences. On the contrary, these sciences *are really concerned with* objects themselves, not merely with thing-designations".[21] Here is at least one assertion in the material mode. In describing (and how else can it be done?) the relationship between object-language and objects, Carnap should translate his assertion to the tautologous sentence: "An object-language refers to object-designations". Put in the formal mode, the object-language could for the positivist make no reference to things.[22] Such considerations as the above cast serious doubts upon

[21] P. 72. Italics mine.

[22] In his criticism of their theory of meaning, Mr. Ewing gives the positivists a choice. Meaning is either analytic and then has no reference to reality, or it is synthetic and then must be derived from experience, thus forfeiting all claims to necessity. A. C. Ewing, "Meaninglessness", *Mind*, XLVI, No. 183, July 1937.

the positivistic charge that the tradition has been confined to one long series of pseudo-problems. The suggestion that pseudo-problems arise from our attempts to deal with things when we should confine our attention to language fails to take account of the referential function of language. If to give up pseudo-problems is to give up referring language to experience, we save philosophy only by making it sterile. Any philosophy which will not permit us to distinguish between the illusory and the veridical cannot expect to gain acceptance. An alternative is to interpret the material mode as a description, more or less adequate, concerning a real state of affairs and whose function is to point not to the unity of science but to the unity of experience. The description may be faulty, but it is meaningless only when it fails to lead us to experience. Moreover, the fault may be our own, rather than the describer's.

IV

The direction of our analysis has been to cast quality into its proper epistemological rôle, an analysis of which would lead far beyond the scope of this article. But quality I should say is definable only with respect to purpose in whose realization it appears as the unity of experience. Such an analysis would, of course, have to be made largely in the material mode. It would, among other things, differentiate consciousness as experience from physiological activity as recognizable in action. In this it would point up and reinterpret Professor Carnap's statement that psychological predicates are "intersubjectively confirmable but only subjectively observable".[23] It would insist upon "something more" than structure, and that something more would be consciousness itself, as the embodiment of a purpose by which alone anything can be unique. This may be characterized as feeling, not dumb feeling, but intelligent sentiment which may be analyzed once one has insight into the purpose expressed. Sentiment as distinct from sentimentality may be analyzed (always in the material mode) not by one who is unable to gain insight into the purpose but only by him who has sympathetic imagination. The meaning of the sentence "This book describes Africa" would not be translated "This book contains the word 'Africa' ". In analyzing purpose we should expect to understand in essence what James Farrell means when he says that *Studs Lonigan* is a study of the concrete effects of spiritual poverty, and we should be able to see the significance of setting the scene elsewhere than in the slums. We should be able to understand Farrell's statement that "When Studs and his companions drink, they do so as a gesture of defiance, which is in the spirit of the times [the prohibition era]". The alternative is to take the point of view of the psychologist who analyzes brute behavior without giving us any no-

[23] "Testability and Meaning", 11.

tion of the nature of that behavior. Fite has indicated what would here be an essential distinction between the agent and the observer.[24]

If we cannot recognize the validity of the material mode, perhaps we can recognize the pragmatic test. Without consciousness—*i.e.*, without the desire to express purposes, the realization of which is the unity of experience, or what I should call quality—could action be intelligent, for I assume that we do not act just to keep the world going? Without consciousness or quality science would have no beginning or end, for verifiability anticipates and verification rests in quality. Without quality we should have no inventions or art. For surely the artist is not interested in having emotions. In short, without consciousness we should have no values, no culture, and no logical positivism. If we want a convenient phrase to summarize our insistence, we may call it immanent meaning. We need not regret the positivist's pre-empting the word meaning for the method of verification, but we must still discriminate in the verificatory process both its purposive beginnings and its experiential terminus. Consequently, we may give up the material mode only at the cost of eliminating experience. We intend no brief for loose terminology or for sloppy thinking, but if qualities cannot be cast in the formal mode, it would seem better practice to alter our conventions rather than to eliminate propositions referring to immediate experience. Re-interpreted, the principle of tolerance may gain tolerance for experience as well as for sentences.

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THE REFERENDS OF ART CRITICISM

IT HAS frequently been observed in the history of philosophy, from Socrates, who originated the idea of semantic discipline, to the logical positivists and other semanticists of the present day, that progress in philosophical knowledge is obstructed by the failure of speakers to know and to make known what they are talking about. When a large enough number of readers are sufficiently mystified by the writing of the philosophers, champions of common sense rise in protest. *The philosophers may know what they are saying,* is one form of protest, *but they certainly don't know what they are talking about.* Protest has even gone to the extent of declaring that the philosophers are not talking about anything at all, *i.e.*, that they are afflicted with psitacism.

[24] Warner Fite, *The Living Mind*, Ch. 2. *Cf.* Professor Hartshorne's statement: "The true distinction is that, although both languages apply to all individuals, and in this sense are co-extensive, the physical language states only an aspect of each individual, whereas the psychical language states all aspects." "Metaphysics for Positivists", *Philosophy of Science*, II, No. 3, July 1935, p. 300.

The semantic situation is no better in æsthetics than it is in other fields of philosophy, the speakers commonly failing to locate and identify the referends of their thought. Fundamental to the development of a science of art and art criticism, is the elimination of ambiguities of reference of the term 'art'. Writers on art have generally failed to realize that they have to deal with a plurality of related referends, each of which should be distinguished from the others, and to each of which certain statements are uniquely appropriate. A recent book in æsthetics has a chapter devoted to the question: What is art? The author takes it for granted (but with no recognition of his presumption) that 'art' has a single and simple referend; yet it turns out that the question he is actually interested in answering is: What is the *superlatively beautiful* in works of *fine* art?—an extraordinarily complex question.

As a consequence of the failure mentioned above, a great deal of nonsense, confusion, and a peculiar mystical and unintelligent worship of 'art' results. Writers on art may believe they are talking about a certain subject, when, in fact, their thought has reference to another. They may believe they are talking about a *single* referend, when their thought applies to *several;* or about *several,* when their thought refers to but *one.* Or, without their realization, their thought may vacillate between two referends, or wander about in all possible ways. It is my purpose in this paper to distinguish each of the referends of art *the aethetician* should take into account, and, as a consequence, to distinguish the several referends of art criticism. Thus the paper may be considered an exercise in semantics. I shall begin with the simplest and broadest referend of the term 'art', proceeding, through discrimination and specification, to locate and identify the plurality of referends being sought. For much of what I have to say I am indebted to Aristotle, but this is not intended, by any means, to be an exposition of Aristotle.

Art, applied to its undivided referend, pertains to man as a causal agent, and not to nature. A fact of art is different from a fact of nature, since in the former the intelligence and the freedom of man are involved, and in the latter, not. But the capacities and the activities of man are various—since man *thinks,* man *conducts himself,* and man makes. Art, in its autonomy, it is evident, is concerned with making: its subjection to logical validity or truth, or moral right, or ethical good, would be heteronomy. How, then, is making to be distinguished from thinking and from conduct? The complete life of the self is, of course, the life of will: one wills to think, or not to think; to make, or not to make. Nevertheless, the essential nature of willing is distinct from the proper nature of thinking and of making, even though these latter must be considered abstractions from the total life of the self.

Each of these three activities has objectives peculiar to itself and is ruled by a kind of obligation peculiar to itself.[1] Man wills to think; but he does not *will* any proposition true; he thinks it true. Thinking is ruled by principles of validity and truth; the thinker being under the intellectual obligation of subjecting belief to these principles. Conduct is ruled by principles of right and good, the person being under the moral obligation of subjecting will to these principles. The maker, in his essential role of "poet", is free from both of these kinds of obligation. He need produce no truth; nor need he consider whether it be morally right that the object he is making be made. A narrative about giants, witches, ogres, and fairies, may be well-made, but need have no truth; likewise, the willing that counterfeit money be made may be immoral, but the counterfeit money may be well-made. The maker, therefore, is under the æsthetic obligation of producing the well-made, or the greatest beauty possible in any particular product.

Art, thus, is concerned with human activity, rather than with nature; and more particularly with making, rather than with thinking or conduct.

Within the field of making, however, 'art', with different conjoined determinants, has three different referends. (Unfortunately, the unqualified term, art, is indiscriminately applied to any of these.) The first of these referends is: the *power*, through the agency of intelligence, to make. The second is: the *process* of making. And the third is: the *product* of making. Each of these in turn may be broken down into more than one referend. And each of these three referends is a proper subject of poietic criticism.

The first of these, namely, the power, through intelligence, to make, may be broken down still further, as follows: A., to: the power, through *knowledge* (in conjunction with experience), to make. B., to: the power, through *experience* (without the conjunction of knowledge), to make. And C., to: the 'mere' *manual capacity* to make. These are all distinguished from chance human agency. "A" is identical with Aristotle's strict definition of art as (*Nicomachean Ethics*, 1140a 9): "a state of capacity to make, involving a true course of reasoning". The power to make is, in this case, based upon universals, *i.e.*, upon principles. For example, art, in this reference, is possessed by the civil engineer who knows *that* and *why* a certain skyscraper could withstand winds of a certain maximum velocity.

In the case of referend "B", the power, through experience (without the conjunction of knowledge) to make, the particulars that give the maker intelligence of how to make have not been organized by principles; they would function merely severally, as a totality. They

[1] See the present writer's article, "Intellectual and Moral Obligation", in *The Journal of Philosophy*, August 18, 1932.

serve as mere models, rather than as principles, and their successful application would be restricted to products identical with themselves. The distinction between agency by art and that by nature becomes narrow when the referend of 'art' is "C", the 'mere' manual capacity to make. The manual capacity to make involves the agency of intelligence, but it is mental habit, rather than experience, that would function.

The exposition of these three kinds of poietic power provides a scale on which the art possessed by any individual may be rated, and reveals one proper objective of art (poietic) criticism. The principle is that of poietic causality or control. In terms of this principle, the ideal of art (under the first general referend) is that poietic capacity which would involve the complete causality of intelligence with respect to a product, or, differently expressed, perfect control. This principle accords with, and was partly suggested by, a statement of Aristotle's (*Politics,* 1258b 35), that "those occupations are most truly arts in which there is the least element of chance". The critical judgment passed on the basis of this principle may be called *the subjective poietic judgment,* or *the judgment upon poietic power.* Evidently, the power, through knowledge (in conjunction with experience), to make, would receive the highest rating; the power, through experience (without the conjunction of knowledge), to make, would receive the middle rating; while the manual capacity to make, would receive the lowest.

If the dichotomy between the agency of art and that of nature is maintained, some interesting problems appear. One is the status of chance products of human intelligence. Another is the status of artists who are, or seem to be, or claim they are, inspired. Plato's attitude toward these persons is ambivalent. On the one hand, he appears to ridicule those who make and yet do not know how or by what agency they produce. On the other hand, he seems willing to admit that these inspired ones may indeed have been breathed into by the divine (in which case the inspired ones would possess no art, since *they* do not control). There is, in fact, a curious tendency for artists to assign the agency for their making to some other source than themselves. Thus J. M. Barrie complains that he might have amounted to something had it not been for M'Connachie (his unruly, writing half). Similar problems relate to the insane, the neurotic, etc.; while the poietic status of the subconscious refers to a field in which there is much still to be explored.

We come now to the second general referend of the term 'art': the process of making. Usually writers employing the term in this application intend to refer to the process by which the artist transfers the æsthetic object from the privacy of his own imagination to a public medium, *e.g.,* to the process by which the portrait present in the artist's imagination is executed in oils on canvas. (For purposes

of analysis I am assuming the case in which the æsthetic object is complete in the imagination before it is executed in a public medium.) Art, in this usage, refers to the *exercise* of poietic intelligence. It offers, too, another object of art criticism; the judgment in this case being passed upon *the suitability of the process* to achieve its aim. This, the judgment upon technique, may be called *the technological judgment*. Since this judgment considers simply the conduciveness of means to end, and does not concern itself with the rank of the source of the intelligence exhibited, it is logically independent of the subjective poietic judgment, the judgment upon poietic power. To illustrate: the man of experience, in a certain case in which he is fortunate because his poietic problem is entirely met by his experience, may make *as if* he made from knowledge. His deficiency in poietic power would betray itself only in cases where his experience did not serve as adequate model for the novel poietic problems.

However, it is frequently overlooked that there has been a process of making prior to that in which the private æsthetic object is given a public appearance. This is the process in which the private æsthetic object itself is made. The making of the private æsthetic object is the first objective of poietic intelligence; the second, if it comes at all, being to give that object a public appearance.

In certain cases the satisfactory achievement of this second objective will require more than one process of transfer. In the drama, for example, when the 'book' of the play has been written the æsthetic object may be said to have been given a public status, yet not the kind which the ultimate objective demands. There is still to come the process of producing the play with characters upon a stage. This is well set forth in Pirandello's "Six Characters in Search of an Author", where the characters have achieved only the first of these objectives, conception, development, and birth in the imagination of the author. Since the author cannot or will not give them public appearance even in a "book', they come to the stage itself to persuade a manager to assist them in realizing their ultimate objective.

We come now to that referend of 'art' which is the *product* of poietic intelligence, *the work of art*. The unqualified term 'art' is commonly used in this reference, unfortunately: but to avoid ambiguity other determinants should be conjoined with it. Perhaps even 'work of art' is not free from ambiguity, since it might be taken to refer either to the process or to the product. The full unambiguous expression would be, the product of the exercise of poietic intelligence. Properly speaking, any product of poietic intelligence is a work of art (to use the brief expression). Yet many verbal wars have raged about the question, Is *this* a work of *art?* when the object being considered is indubitably a work of art (in the reference indicated above). Surprising economic consequences have hung upon the issue;

for the story is told of a United States Customs Inspector who refused to allow a block of stone intended for a church altar to enter the country duty free, on the ground that it was not a work of art. The importer was able to persuade the inspector that he had a peculiar, narrow, and mistaken conception of 'work of art'. The inspector, like the author referred to early in this paper, thought that 'art' referred singly and simply to 'a superlatively beautiful work of fine art'.

To be a work of art, not only is it unnecessary that the object be superlatively beautiful; it is also unnecessary that it be a work of *fine* art. For co-ordinate with what is referred to by 'work of fine art' are what is referred to by 'work of useful art' and by 'work of theoretical art'. Now these three referends cannot be distinguished in terms of the proper aim of poietic intelligence, since, as we have seen, poietic intelligence in its autonomy aims at the greatest possible beauty in its product. They must, then, be distinguished in terms of ulterior purposes. In choosing to make, the artist may have any of three purposes ulterior to the proper aim of poietic intelligence: the product is to be well-made, but beyond that it may be intended as a contribution to utility (the work of useful art); or as a contribution to truth (the work of theoretical art); or, finally, it may be intended as an opportunity (in the artist himself or in other potential spectators) for æsthetic contemplation and response. This third ulterior purpose defines 'work of fine art', and may be called the æsthetic motive; and the expression 'work of æsthetic art' is, thus, more satisfactory than 'work of fine art'. It follows that any work of art is a work of æsthetic art if the artist chose to produce it for the ulterior purpose of contemplation and æsthetic response. Some cobblers, conceivably, choose to make shoes simply in order that their beauty may be contemplated and responded to æsthetically. Thus the segregation of certain groups of products called works of fine art would be justified only on the ground that in their making the æsthetic motive generally predominates.

The judgment upon the comparative æsthetic value of any work of art (not merely, of course, the work of fine art) brings us to another proper objective of art criticism. This, in distinction from the subjective poietic judgment, may be called the objective poietic judgment. Just as the technological judgment is logically independent of the subjective poietic judgment, so the objective poietic judgment (the judgment of comparative æsthetic value) is logically independent of both of the others. Thus the poietic control may be complete (as in the making of a nail), but the æsthetic value comparatively slight. Or, the poietic control may be deficient (as, let us say, in "Kubla Kahn", supposed to have come to Coleridge in a dream), but the æsthetic value comparatively great. Again, the technique may be

superior (as in the case of the muralist who has to surmount difficulties presented by heat vents, doorways, etc.), but the æsthetic value of the product inferior.

This, properly, completes the account of the referends of art criticism. However, since the art critic sometimes takes it upon himself to pass judgment upon the æsthetic taste of the spectator of works of art, we shall, perhaps, not be wandering too far afield if we take notice of the referend in the critique of taste.

The critique of taste is a proper part of æsthetic criticism, and, just as the judgment upon the comparative æsthetic value of objects extends to all æsthetic objects regardless of whether or not they are products of poietic intelligence, so the critique of taste is concerned with the æsthetic response to all æsthetic objects. There is confusion, even here, as to what the referend is in the critique of taste, some writers failing to distinguish between the correctness of the spectator's judgment of comparative æsthetic value and the adequacy of the spectator's æsthetic response to the particular degree and kind of æsthetic value in the æsthetic object present to him. The latter is the proper referend of the critique of taste.

In conclusion, let us look at the apparently simple and innocent question, What is art? It is asked and it is answered, and conceptions of art criticism offered in consequence, in spite of the fact that the several referends of 'art' and of 'art criticism' have not been located and identified. It is only to be expected, then, that readers of books, chapters, and articles on art and art criticism come to suspect that the writers are not talking about anything at all.

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REVIEWS OF BOOKS

Probability, Statistics and Truth. By RICHARD VON MISES. New York, The Macmillan Company, 1939. Pp. xvi, 324.

The growth of statistical science in the nineteenth century was accompanied by serious questioning of the classical definition of probability. Ellis, Fechner, Venn, and Peirce, to mention only a few, saw the need for scrapping subjectivist, *a priori* notions and urged the substitution of a concept based on relative frequency. However it was not until Prof von Mises' work began to appear that a detailed and systematic presentation of a frequency theory of probability became available. For this reason the translation of the author's *Wahrscheinlichkeit Statistik und Wahrheit* is a welcome event. The book is an excellent non-mathematical account of his theory. In addition to an exposition of fundamentals it contains a chapter on the theory of errors, one on the problems of statistical physics, and a critical discussion of more recent contributions to probability theory.

Von Mises' fundamental notion is that of a *collective;* it is illustrated by a series of tosses of a coin whose results turn up in complete disorder. Each member of the series of events exhibits one of a set of mutually exclusive properties; in our illustration each toss results in either head or tail. The first important condition imposed upon this series is that the relative frequency with which a property (*e.g.*, head) appears in it, approach a limit in the mathematical sense. The second condition is that this property occur in the series in a *random* manner. This is an attempt at a precise formulation of the unpredictable character of each result in the series. According to this condition, if we were to select the series of results of the *nth* toss of a coin, where *n* is an even number, this sub-series would have to yield the same limit for the property head as appeared in the main series. In general, this must hold for *every* sub-series selected in this way. Such a method of selection is called 'place-selection'. Finally, if a series has a limit p (*e.g.*, ¾) with respect to a property (*e.g.*, head), then if and only if the value of this limit remains unchanged after all possible place-selections, will the probability of getting a head with this coin be ¾. If a series fails to satisfy both conditions, it is not a collective, and we cannot meaningfully assign a probability to any of its elements.

The concept of a collective is undoubtedly one of the most important contributions to the theory of probability. However some writers claim it is contradictory. In answering them von Mises cites the work of A. Wald, who has demonstrated the consistency of the collective-concept. But von Mises fails to point out that Wald's proof is preceded by a reformulation of the second condition, a reformulation which has to be made to avoid contradictions. It cannot be said, as

von Mises continues to say in this book, that *all possible* place-selections must yield the same limit as that in the main series. For Wald shows that if this is demanded without restriction, contradictions turn up. Consequently he replaces von Mises' class of place-selections by a narrower, more precisely defined class of *selection-rules*. When this is done, the consistency proof can be given.

The value of von Mises' approach is demonstrated most clearly in his discussion of the laws of large numbers. He successfully destroys all attempts to construe the Bernoulli and Bayes theorems as "bridges" from the *a priori* definition of probability to empirical predictions. These bridges can be built only by surreptitiously introducing a definition based on frequency considerations.

One point in von Mises' treatment of these theorems is puzzling. He seems to think that once a frequency theory of probability is accepted, the theorems become empirical propositions. Similar remarks occur in his discussion of the theory of probability taken as a whole; he construes it as analogous to a theory in empirical science. It seems to the reviewer however, that the frequency interpretation of probability in no way robs the axioms and theorems of probability of their analytic character. On the contrary, it is just this interpretation which renders them analytic propositions in the theory of real numbers. The principles of the theory of probability are not established in the way we confirm theories in physics. Perhaps Prof. von Mises is referring to probability-theories *in* physics itself, *e.g.*, those in quantum mechanics, which *are* empirical. However these are not *principles of the theory of probability* in the ordinary sense of that phrase.

It must be repeated that *Probability, Statistics and Truth* is an excellent non-mathematical introduction to the theory of probability. The author's ability to popularize simply and without distortion is rare among scientists; it is consoling.

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Intelligence in the Modern World: John Dewey's Philosophy. Edited by JOSEPH RATNER. New York, The Modern Library, 1939. Pp. x, 1078.

A Bibliography of John Dewey, 1882-1939. By MILTON H. THOMAS. New York, Columbia University Press, 1939. Pp. xviii, 246.

John Dewey has left an incomparably deeper mark on American thought, educational and social and philosophical, than any man of his generation or, probably, of any other. But the fruits of his pen, scattered over nearly sixty years and through innumerable journals, newspapers, periodicals, grow more inaccessible with every passing

year. The problem which this creates for the scholar who is interested in the whole of his work or in his treatment of a particular phase of human activity will not find an adequate solution unless an edition of his collected works is published. Until then, Mr. Thomas's new bibliography will be an indispensable aid. Following the pattern of a similar compilation prepared a decade ago by him and Mr. Herbert W. Schneider, the present volume records chronologically Dewey's publications, and adds a selected list of writings about Dewey, and a complete index. Mr. Schneider has supplied an informative little introduction, "Dewey's Eighth Decade".

The college student and intelligent layman have needs of a less exacting sort which Mr. Ratner's selections will doubtless satisfy very well indeed. No one is better qualified to discharge the formidable task of bringing within the covers of one volume (albeit a very fat one) a set of passages that will be truly representative of Dewey's contribution to human thought. And Mr. Ratner has wisely chosen to emphasize the nature of Dewey's positive contribution by taking his materials mainly from the more systematic works of the last twenty years, including such recent volumes as *Logic: The Theory of Inquiry* and *Experience and Education*. Arranged systematically according to topics, the selections illustrate Dewey's interpretation of almost the entire range of civilized experience, from science to religion, from education to international law, from logic to æsthetics and morals.

One of the most valuable features of this volume is Mr. Ratner's extensive introduction which amounts to a book in itself. It will prove helpful to the general reader in obtaining orientation in Dewey's thought. But it is also an interesting contribution to the technical literature about Dewey, for it is no pedestrial summary of the views about to be presented *in extenso* in the text, but a vigorous and enthusiastic exposition and defense of the thesis: "With respect to some specific problems, alternative solutions are possible, but with respect to the basic problem of scientific method there is no valid alternative to Dewey's solution", (p. 240) the problem of scientific method being regarded as "the all-important problem, social as well as philosophical" (p. 241). Mr. Ratner's exposition of the problem and of Dewey's solution is able and lucid, and follows, as it should, the lines laid down by Dewey when he defines his position in contrast with the philosophies of the past. But, although the matter is of great philosophic importance, the attempt to show that the metaphysical difficulties in the positions of Russell and of Whitehead result from failure to appreciate the true rôle of experiment in the acquisition of knowledge seems out of place in a book intended for a wide public. For the questions involved are intrinsically too technical for the philosophically unsophisticated;

and Mr. Ratner's treatment, which was intended at least in part for this group, is not technical enough to satisfy the sophisticated.

JAMES STREET FULTON

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La logique d'une idée-force. L'idée d'utilité sociale et la Révolution française (1789-1792). Par JEAN BELIN. Paris, Herman et C^ie^, 1939. Pp. ii, 636.

Les démarches de la pensée sociale. D'après des textes inédits de la période révolutionnaire (1789-1792). Par JEAN BELIN. Paris, Herman et C^ie^, 1939. Pp. iv, 100.

The followers of Bentham saw in the idea of social utility an empirical test, by which, without recourse to 'metaphysical' ideas such as natural rights, they might evaluate existing institutions and justify proposals of reform. That social utility had no such definite meaning for the French is clear from these two dissertations offered for the degree of *docteur ès lettres.* In the *thèse principale* M. Belin explores the content of the idea, since exact definition is not possible. He shows that social utility (called also the general interest or public happiness) was identified, from 1789 to 1791, with the belief in enlightenment, progress, regeneration, the need for a written constitution, and the natural rights to liberty, equality and property. M. Belin writes as a student of jurisprudence with an interest in sociology, and his work will seem in places inadequate to the historian or the philosopher. The historian will feel that the concepts are not related to social context, that ideas are represented as growing out of each other, rather than out of human situations; and he will not quite agree that the French state, after 1789, was reconstructed by deduction from principles accepted as axiomatic. The philosopher, it is to be feared, will find that the book hardly ever gets beyond empirical description.

The author is trying to find a logic, a system of connection among all the ideas, named above, for which social utility stood. By an *idée-force* he means an idea charged with an emotional enthusiasm which removes it from the purview of rational logic. He studies this *idée-force* in the unpublished petitions submitted to the National Assembly, and justifies this mixture of documentary historical research with the consideration of an important philosophical problem on the ground that the petitions represent a more spontaneous and natural type of thinking than that of the educated men in the Assembly. It is doubtful, however, whether the Jacobins who wrote the petitions were very different from the Jacobins who legislated in Paris.

What he succeeds in showing is the coexistence rather than the connection of the ideas that he discusses. He points out that in determining specific policies the revolutionaries often appealed to one

principle to avoid the implications of another. He finds that by 1792, when war had begun, all principles had yielded to social utility in its extreme form, *salus populi*, nationalism. But he gives a description of historical fact rather than an analysis of relationships. In the *thèse complémentaire* more analysis is undertaken, and the connections are represented in terms of mathematical formulæ, which, however, rest on terms somewhat arbitrarily defined. No convincing systematic connection, as distinct from the mere affirmations of revolutionists, ever clearly emerges. The problem is a very difficult one, and it is not a condemnation of the two works here presented to say that it remains unsolved.

ROBERT R. PALMER

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Catholics and Unbelievers in Eighteenth Century France. By ROBERT R. PALMER. Princeton, Princeton University Press, 1939. Pp. 236.

We have been too readily inclined, says Mr. Palmer, to think of the eighteenth century as the period in which "certain bold and progressive men . . . do battle with vague but powerful adversaries who are rarely described but are indicated as extremely unenlightened. . . . The purpose of this book is to examine the ideas of the opponents of the *philosophes*" (4). Mr. Palmer believes the critics of Montesquieu, Voltaire, Rousseau, Diderot, and the rest, were by no means "feeble and inept" (226). On the contrary, he holds that they often exposed with clarity and penetration the weaknesses of materialism, the false assumptions of the sensationalist philosophy, the natural wickedness, instead of the natural goodness of man, the too optimistic unreality of much of the philosophy of the *philosophes*.

Mr. Palmer's final summing-up is sane and modest: "The orthodox thinkers do not deserve quite so deep an oblivion as they have fallen into. Neither should their merit be exaggerated. . . . None of them had the gifts of expression of Rousseau or of Voltaire. As conservatives they were all condemned to repeat what had been heard before; they could not hope to be brilliantly original. Committed to a position which they held to be timelessly true, they had little to attract a world in rapid change. . . . The French Revolution, transmitting the principles of the *philosophes* to the nineteenth century, sealed their doom. After the Revolution the *philosophes* seemed in retrospect to be giants, their adversaries mere pygmies. Today, now that the faith in progress, liberty, and a beneficent natural order is being questioned, we can consider with more patience the criticism which this faith received when it was formulated" (222-223).

Not unnaturally, however, Mr. Palmer tends, I believe, to underemphasize the constructive side of the ideas of the *philosophes*, that

aspect of their thought which still has meaning for modern society. Thus unconsciously he gives a total picture less true perhaps than his concluding sentences would suggest. And, if the opponents of the *philosophes* had little or nothing to say to an age crying out for much-needed change, does this fact not indicate a fundamental unreality on their part, which justifies and explains the oblivion into which they have fallen?

Yet, if I find myself more in agreement with Mr. Palmer's final paragraph than with the implicit conclusions of his "rehabilitation", I should like to emphasize that this is distinctly an able book, packed with materials based on original and often difficult sources, closely reasoned, calm and judicial in tone, a book that cannot safely be neglected by any thorough student of the eighteenth century.

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John Dewey, an Intellectual Portrait. By SIDNEY HOOK. New York, The John Day Company, 1939. Pp. ix, 242.

Many readers complain of Dewey's style, saying that it acts as a barrier to the achievement, by a non-philosopher, of any adequate notion of Dewey's thought as a whole. Professor Hook admirably overcomes this difficulty in the present book. In twelve brief chapters, ranging from "The Man" (Dewey) to "Truth", Professor Hook summarizes Dewey's thought in all its major aspects. And he does so with a succinctness and vivacity seldom achieved and never sustained by Dewey himself. In attaining this result, Professor Hook eliminates footnotes, keeps quotations to a minimum, gives only a very simplified bibliography, and no index whatever. These omissions are, of course, necessary to his purpose. Occasionally, the reviewer feels, Professor Hook forgets himself, and speaks as one versed in the philosophical schools. For example, his comparison of Dewey's position with that of logical empiricism (pp. 42-45) would, I fear, be 'nonsense' to readers unacquainted with logical empiricism. But these lapses are few.

Throughout the book, Professor Hook speaks as an admirer and advocate, not merely an expositor. This, no doubt, is to a large extent the cause of the vitality of the exposition. Only in the treatment of Dewey's social philosophy is there a definite suggestion of criticism. This is that Dewey should join hands with the 'realistic', as contrasted with the 'Utopian', Marxists, realizing with them that the overlords of American finance and industry will probably never voluntarily accept democratic intelligence as a method of deciding social issues. In fact, the eulogistic strain becomes somewhat monotonous, especially when it becomes too obtrusive. For example, in the first chapter, even Dewey's poor speech delivery and his lack of intentional

appeal in the classroom to students' interests—Hook does not show the inconsistency here with Dewey's own theories of education—are subtly turned into forms of flattery; and all theoretical objections to Dewey's views are turned into obvious absurdities or complete misunderstandings. But perhaps this absence of the critical spirit so essential to the philosopher is necessary in a book designed to appeal to non-philosophers. Professor Hook, in his *The Metaphysics of Pragmatism*, has revealed that he is entirely capable of treating Dewey's thought philosophically.

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Logik als Erfahrungswissenschaft. Studien zur Reform der Logik. von ARTHUR BAUMGARTEN. Kaunas-Leipzig, Pribacis, 1939. Pp. 94.

Baumgarten's previous publications[1] contain the essential principles of his teachings on logic. In the present study these teachings are systematically ordered and elaborated. Being a genuine thinker, Baumgarten does not limit himself to a discussion of this or that special problem, but rather he investigates the fundamentals of his subject.

We are advised that our modern logic, like all other intellectual sciences, is out of date. If it is to fulfill its scientific mission, it must experience a fundamental reform. First of all—just as other sciences have already done in a slow process of differentiation—it must emancipate itself from philosophy and found an independent scientific discipline, namely that of general methodology.

Being methodology, logic must be formal; for it is interested not in the material of the sciences but mainly in their methods. It must further be empirical; for, whereas logic has hitherto dedicated itself to fruitless philosophical speculations on the 'ultimate' problems of knowledge and truth, and has for thousands of years vainly struggled with the puzzle of antinomy, a modern logic must try to fulfill its concrete methodical tasks *vis-à-vis* the individual sciences by offering them practical prescriptions.

A speculative or 'dialectical' logic could readily be constructed in the independent mind of its inventor; the 'empirical' logic, however, must come in contact, and coöperate with, the positive sciences. But not every positive teaching which is popularly called 'science' is a suitable partner for logic. It frequently happens that generally recognized ideologies, instead of being a declaration of objective values, are merely an expression of dominating material interests. So, for instance, the present indifference of our sciences to actual, pressing

[1] *Erkenntnistheorie-Wissenschaft-Philosophie*, Tuebingen 1927; *Der Weg des Menschen*, Tuebingen 1932.

social problems may quite well be an expression of the prevailing ideology which subserves certain interests. The popular dialectical logic, likewise, is nothing but an expression of a definite ideology. However, exactly as our whole social life and all fields of science are at the present time in a state of crisis and in need of new ordering, so also is the dialectic logic. The time is now ripe for a reform of logic. It must become an independent empirical science of methods (methodology) and coöperate with all other sciences.

Baumgarten's postulate of a reform of logic is, as such, nothing original. It is merely the application to logic of a postulate which has been uprooting our social and intellecual life for decades. It is novel, however, perhaps even unique, when one of the leading contemporary philosophers has the courage uncompromisingly to uncover the disrooted fundamentals of our social and scientific position and to propose constructive ways for their adjustment. Baumgarten's study on *Logik* may, therefore, well be regarded as a prolegomenon to every modern logic.

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CORNELL UNIVERSITY

Who Was Socrates? By ALBAN D. WINSPEAR and TOM SILVERBERG. New York, The Gordon Company, 1939. Pp. 96.

The authors adopt from Taylor the view that a main cause of Socrates' condemnation was his being suspected of leading a counterrevolutionary club; but they add that this suspicion was true. They also take over the views that he was a Pythagorean and that this contributed to his indictment. But they hold that all this is true only of the later Socrates. The earlier Socrates, whom Aristophanes guyed in the *Clouds,* was not a Pythagorean and not an aristocrat. He was a democrat, as suited his birth and station, and he prosecuted the materialistic democratic philosophy, which excluded Pythagoreanism but embraced, apparently, everything else, or at least all Ionian science and all sophistry. They regard science and sophistry as a single movement; and they furthermore hold that this single movement was essentially social and political, the rise of a mercantile slave-owning democracy against a landed aristocracy. Their political assumptions are leftish and somewhat inhuman; they feel that to make Socrates an active counterrevolutionary is to make him a low and wicked man.

To weigh their evidence for their views is an interesting exercise; but the conclusion must be that it is as light as a feather. For the statement that Socrates was an active counterrevolutionary they seem to have really none. They construe his refusal to try the ten generals together as "a loyal piece of factional work". They depreciate his attitude towards the arrest of Leon of Salamis, while admitting that "he shrank from deeds of direct violence". They tacitly regard the

fact that he was suspected of being a counterrevolutionary as proof that he really was one. And that is all.

Equally unsubstantial is their evidence that Greek science was social and political in origin. Their statement, that "physical speculation, as we have seen, arose out of an interest in the meaning and nature of justice", appears to be based on the single fact that "the first actual fragment preserved for us from the prosewriting philosophers of Greece" is Anaximander's dictum that the elements of the physical world "make reparation and satisfaction to one another for their *injustice*".

Lastly, the authors show no consciousness of the fact that some of their theses destroy the evidence for another of them. The view that Socrates was a Pythagorean was based by Taylor on the *Clouds* of Aristophanes and the dialogues of Plato. Messrs. Winspear and Silverberg deny that the *Clouds* makes Socrates a Pythagorean, and hence they must rely on Plato alone. Unfortunately, they have also undermined the historicity of Plato. For they maintain that down to, at earliest, 424 Socrates was not an idealist at all, whereas Plato, in the *Parmenides,* represents him as an idealist long before. We may add that, since they hold that Socrates refused to make any defence at his trial, they must also say that Plato's *Apology* is a fiction. If the *Parmenides* and the *Apology* are both fictions, why suppose that the *Phaedo* and the *Symposium* are histories? Yet the *Symposium* is to them the sole and sufficient evidence that Socrates had become an oligarch by 416; and they need both dialogues for their view that he was a Pythagorean.

RICHARD ROBINSON

CORNELL UNIVERSITY

The Kantian Philosophy of Space. By CHRISTOPHER BROWNE GARNETT, JR. New York, Columbia University Press, 1939. Pp. xii, 288.

Our knowledge, as Kant only too well knew, is composed of two kinds of ideas: those originating in sensation; and those originating in reflection. The first we label percepts; the latter concepts. To which of these ideas does the notion of space belong? Is it a percept? Is it a concept? Or is it either?

If we assume, as did Newton, that space is an objective reality, then the idea of space in our minds is a copy of the space outside of us. If space has no such objective existence, then our idea of it cannot have the nature of a percept. This position was taken by Leibniz, who regarded space as an abstraction whose objective counterpart was the order of co-existing points or bodies.

The Newtonian and Leibnizian views of space were antithetical. They were debated by Leibniz and Clarke and by others after them, particularly in Kant's day. Kant was influenced by these debates, and

as the years passed his views concerning space changed. Since, in the opinion of Professor Garnett, no adequate account has been given of these changes, he undertakes to examine Kant's views of space as they developed between the years 1747-87 and to lay bare the details of his arguments and to indicate from what external sources these ideas were derived. The inquiry shows that in 1747 Kant advocated the Leibnizian view (97), but a view showing Newtonian influences; in 1764 he took the position that since the symbols of mathematics are sensuous, the space embodied in them is also sensuous (107); in 1768 he favored an absolute space which existed by itself, was independent of and prior to and therefore the condition of matter. This marks Kant's break with Leibniz. Even though he now regarded space as real and absolute it is "not an object of outer sensation" but an intuition (117). Finally, by 1770 Kant had arrived at the position that space is a pure intuition; and henceforth this view dominated his thinking.

There is no uniform agreement among interpreters of Kant regarding his views on space, not even as far as the *Critique of Pure Reason* is concerned. Sides are therefore taken and the argument is on. To illustrate: Did Kant advocate (in 1768) a real and absolute space? Fischer and Riehl say no; Vaihinger and Kemp Smith say yes. Professor Garnett sides with the latter. Did Kant advocate an essentially different doctrine of space in the *Analytic* as compared with the *Aesthetic?* Cassirer thinks not; Kemp Smith thinks he did. Professor Garnett sides with his teacher, Professor Kemp Smith. In view of these differences in interpretation, it does seem that Professor Garnett is too certain of and over-emphasizes the differences in Kant's views on space in the *Aesthetic* and in the *Analytic*.

There are other aspects in Professor Garnett's account of Kant's philosophy of space which strike the reader. For example, in making known the sources which influenced Kant's views on space, he rightly names Newton, Leibniz, and Euler. He also says that in 1769 Kant shared Euler's views (124). Lambert, whose views and criticisms Kant so highly valued, is strangely overlooked. With reference to the Clarke-Leibniz controversy we are told that Kant's views are so different from "anything in" that controversy "that it would be rash to assume that he studied the controversy at any particular time" (32). But later Professor Garnett says—he is discussing Kant's second argument on space—that he (Kant) followed "the line of thinking which he took over from Leonhard Euler and possibly noticed also in the views of Clarke" (176-77). Surely, this statement can mean only one thing, *viz.*, that Kant was familiar with Clarke's views and therefore with the controversy—as indeed he was.

The book contains nine chapters: an introductory one; three dealing with Newton, Leibniz, and the controversy which ensued; four de-

voted to Kant, tracing his views on space from the early writings through the *Critique of Pure Reason;* in the last chapter, a comparison of Kant with Alexander, Whitehead, and Broad. It shows much labor (no doubt, a labor of love on the part of the author) but little inspiration. I grant that the subject is not very conducive to inspiration; but it certainly should be conducive to vision (intuition). This too I fail to find; but this is probably my fault.

The Kantian Philosophy of Space is neither for the beginner nor for the Kant student; the former will be bewildered by it and the latter will profit more by reading the works of Kant and the commentaries—despite their inadequate treatment (according to Professor Garnett) of space—of Vaihinger, Kemp Smith, Paton, *et alias.*

ADAM ALLES

HINGHAM, MASS.

Proceedings of the Aristotelian Society. Supplementary Volume XXIII: *Hume and Present Day Problems.* London, Harrison and Sons, Ltd., 1939. Pp. xxxiv, 228.

Since 1939 marked the bicentenary of the publication of Hume's *Treatise of Human Nature,* this volume of the Aristotelian Society publications is a work of commemoration. It opens with an address by Professor Kemp Smith in which a revolutionary view of the relation of Books II and III of the *Treatise* to Book I is propounded.

This is followed by a symposium on self-identity in which Professor J. K. Wright and Dr. C. A. Mace are the symposiasts. Professor Wright states a conventional interpretation of Hume's agnostic view of the self, rightly adding that Hume's agnosticism in this regard derives as much from his rationalistic definition of knowledge as from his doctrine of impressions and ideas. Like many others, Professor Wright finds this agnosticism unsatisfactory. He canvases several well-known alternatives to it, such as that offered by Stout's *Manual.* These too are rejected as being unsatisfactory. Professor Wright ends his paper with a eulogy of Hume.

Dr. Mace agrees with his fellow symposiast in finding Hume's agnosticism unsatisfactory. As an improvement upon it, Dr. Mace advances what he avows is a variant of an old version of Dr. Broad's theory of the self as a construction of somatic fields.

The next symposium, "Are there a priori concepts", to which Messrs. D. M. Mackinnon, W. G. McLagan, and J. L. Austin contribute, is not directly concerned with Hume's problems. It is much too long and elaborately controversial to admit of brief characterization. This must also be said of the next symposium in the series, "The Moral Good as a Relation between Persons", in which Mr. J. W. Phillips, Professor A. Macheath, and Professor H. F. Hallett are the symposiasts.

This is followed by a symposium between Professors A. E. Taylor, John Laird, and T. E. Jessop on "The Present-Day Relevance of Hume's Dialogues Concerning Natural Religion". Professor A. E. Taylor finds the *Dialogues* "commonly over-estimated", for they are "wanting in high seriousness and logical coherency". Professor Taylor opines that Hume's "wish to discover truth was not equal to his capacity for discovering it". There is an "ominous fact" in the *Dialogues* which, according to Professor Taylor, makes this plain: "the argument turns avowedly on the postulate of the omnipresence of *Causal* order in nature, though the writer must have been aware that on his own principles he had no right whatever to make any such postulate". This seems to mean that Hume had denied the possible reality of, as distinguished from our knowledge of, a causal order. In view of the consecutive paragraphs of the *Treatise* in which Hume himself raises that question and points out that he makes no such denial, Professor Taylor's "ominous fact" would seem to be no reflection on Hume.

Professor Laird argues that "The upshot of the *Dialogues* (is) that the massive, impressionistic argument for deism is strong and even, perhaps, invincible, but that this totalitarian experimentalism is profoundly different from the positive paths of the sciences". This thesis is argued throughout on the basis of textual exegesis.

Professor T. E. Jessop formulates a series of unfavorable judgments of the *Dialogues* on the basis of criteria which, as he says, derive from an Idealistic philosophy. One would have thought criteria thus derived to be rather irrelevant to Hume's philosophy.

In his Inaugural Address, Professor Kemp Smith argues that Hume was initially interested in ethics; that he wrote Books II and III of the *Treatise* before Book I. In support of this contention, what are described as "two main pieces of evidence" are presented. The first of these consists of the assertion that the doctrine of sympathy "must surely have been worked out prior to the enquiries which led him to deny that there is any discoverable impression of the self. . . ." The "must surely" here is not supported by any textual evidence at all.

As "a second item of evidence", the fact is cited that for Hume the natural relation of cause and effect is a mode of association. And this, Hume's critic says, "is very surprising". That one of the essential and characteristic features of Hume's epistemology should be found surprising, would seem to argue that it is very surprising indeed that Hume is Hume. And the assertion that this element of strange surprise can be eliminated only if we assume, as Professor Kemp Smith insists we "must", that Books II and III are prior in point of composition to Book I, is a demand for an assumption where none is called for. It is no more surprising that Hume found causal

inference to be a process of association among habits of imagination than that, as a result of critical arguments which he borrowed from (and with explicit reference to) Malebranche, he failed to find logically necessary connections between successive experiences. With reason and experience ruled out by his critique of the naïve claims of causal inference, Hume argues that the principles "of union or association" in imagination alone remain as the source of that inference.

There are passages in Book II which would seem to stand against the suggestion that it was composed before Book I. For reasons of space no more than two or three of them can be adduced here. At the very outset of Book II Hume writes: "As all the perceptions of the mind may be divided into *impressions* and *ideas,* so the impressions admit of another division into *original* and secondary. This division of the impressions is the same with that which *I formerly made use of when I distinguished them* into impressions of *sensation* and *reflection* (consecutive italics mine). The second sentence of this passage is annotated: "[1]Book I. Pt: I, sec. 2", at the bottom of the page.

Then again, eight pages over, in section IV entitled "Of the relations of impressions and ideas", Hume writes of "certain properties of human nature, which . . . are not commonly much insisted on by philosophers. The *first* of these is the association of ideas, *which I have so often observed and explained*" (concluding italics mine). Yet in the first eight pages of Book II, association is neither observed nor explained. More than a few other passages of closely similar import could be adduced. Taken at their face value they stand sharply against the plausibility of Professor Kemp Smith's singular suggestion.

To be sure it may be that these passages appear in the manuscript of Book II as emendations. They may be afterthoughts, added to the manuscript after Hume had written Book I. But if this be so, it is surely remarkable that Professor Kemp Smith, who has had access to the manuscripts, did not bother to tell us about it, if only in a footnote.

RALPH W. CHURCH
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Plato's Law of Slavery in Its Relation to Greek Law. By GLENN R. MORROW. Urbana, The University of Illinois Press, 1939. Pp. 140.

Modern scholars have been prone to think that Plato shared their own aversion to slavery. Thus Professor Barker wrote in *Greek Political Theory* (1917): "Slavery in the strict sense of the word, as indicating personal chattels, and not praedial serfs, hardly exists in the *Laws,* any more than . . . it exists in the *Republic*" (323 n.). Constantin Ritter, opposing Zeller's assumption that slavery had a place in the *Republic,* conceded its existence in the *Laws,* but held that here the treatment of slaves would be "sehr mild und menschenfreundlich"

(*Platon*, ii, 604). The common impression seemed to be that in a purely ideal state Plato would have abolished Athenian slavery altogether; that he conserved it in the *Laws* reluctantly and with embarrassment.[1]

Could this view survive an examination of Plato's detailed provisions for the treatment of slaves? Professor Morrow gives us at last a definitive answer to this question. Others had noticed instances where the Platonic law was harsher to the slave than contemporary Athenian law.[2] Professor Morrow now draws up the balance sheet after a careful study of all the evidence, and finds: "Plato's law represents a deliberate effort to sharpen the familiar distinction between slave and freeman, and to maintain it more rigorously than was done in Attic law and custom" (127).

The most important innovations at the expense of the slave are:

(i) The slave's life and person are less secure. For example, Plato does not provide prosecution for either *hybris* to the slave or for the murder of the slave by a freeman (except where a slave informer has been done away by the guilty party).

(ii) Punishment of slaves is less restricted in its administration and more severe in its effect. Thus private persons are often permitted, and sometimes compelled, to take the law in their own hands and punish an offending slave on their own.

(iii) The status of the freedman deteriorates.

(iv) The status of persons of mixed descent is less liberally fixed.

Innovations in favor of the slave are far more rare. One is worthy of comment: Plato accords the slave the privilege to testify without torture at a murder trial, and even to act as a *synegoros*. One can appreciate the humanity of this reform. But what can be the judicial value of the slave's testimony or *synegoria* in favor of his master in the light of the vast power the master has over the slave? Professor Morrow repeats approvingly Mahaffy's comment that the torture of slave-witnesses was stupid. Barbarous this custom certainly was. But was it stupid—or a desperate expedient to counteract the slave's fear of his own master?

A few minor notes to Professor Morrow's admirable text:

(i) The education of slaves, p. 44.

(a) "Slave children are to be educated along with free children up to the age of six at least." This statement is based on inconclusive evidence (794a-c). Ritter[3] took hastily the chastisement of "slave, alien,

[1] Wilamowitz (*Platon*, i, 674) detects embarrassment in the brevity of the reference to agricultural slavery in *Laws* 806d. He is followed by Bisinger (*Der Agrarstaat in Platons Gesetzen*, 86).

[2] *E.g.* Chase (*Plato's Laws and Athenian Institutions* in *Harv. Studies in Class. Phil.*, 1933, 179, 191) and Westermann (art. *Sklaverei* in Pauly-Wissowa-Kroll *Real Enc.*, Supp. vi, 920-1).

[3] In *Kommentar*, 206, after Susemihl; also *Platon*, ii, 604.

or citizen" at the public nursery to refer to the children, whereas it may only refer to their nurses and pedagogues. Consider the words "a citizen who disputes the justice of the correction" (794bc); can these possibly refer to a child between the ages of three and six? It may be urged that the earlier expression, "all the children of the specified age" (794a), must include slave-children. The answer is in 794a1-2, which seems to introduce a discussion of the education of the children of the freeborn. It may be asked again why the reference to the nurses in 794a should be to females (τὰς τροφούς), while in 794b "slave, alien, or citizen" are both male and female. But I see no reason why "the whole group" (794a8) may not include the male pedagogues of whom we hear later (808de).

(b) "Slaves are to take part in the choric festivals, which have a decidedly educational function in Plato's state." Why not add that the choric rôle of the slaves is pointedly different from that of the free—to take the "ugly" parts and "ludicrous burlesque" forbidden to the freemen for moral reasons (816de, echoed again in 817e, "slaves and their masters to receive separate treatment")? So I think Professor Morrow slightly overestimates the benevolent intent of Plato's educational provisions for the slaves.

(ii) The property of slaves, p. 73.

"The slave can in some sense own property." This needs qualification. Slaves of citizens are excluded from trade and handicrafts. Slave salesmen and artificers must therefore belong to aliens; and this is the class of skilled slaves that would normally command wages and might own property. I am therefore inclined to think that of the three passages cited by Professor Morrow two (742a and 941d) most likely refer to the slaves of aliens; and the third (917d) is inconclusive.

(iii) The legal capacity of slaves, p. 75.

The only passage that can be cited in support of the slave's ability to take legal action on his own initiative to get redress for injury is 761d. But here, as Professor Morrow remarks, "the alternative 'whether slave or freeman' is so stated as to apply strictly only to the persons accused, not to the accusers".[4] I cannot see why "most readers" should take the passage to extend to slaves the right of appeal to the *agronomoi*.

These addenda, if accepted, would, of course, only strengthen Professor Morrow's main thesis, which is built on perfectly solid scholarship. Students of Plato will be grateful for the painstaking work that has gone into the writing of this excellent monograph. Its findings compel the revision of important sections in current accounts of Plato's political philosophy.

GREGORY VLASTOS

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[4] Bury's tr. in the Loeb edition misses this point. Taylor's version (1934) gives the exact rendering.

DESCRIPTIVE NOTICES

Schellings Kategorienlehre. Von Otto Kein. Neue Deutsche Forschungen, Abteilung Philosophie. Berlin, Junker und Dünnhaupt, 1939. Pp. 136.

Of all the great German idealists, Schelling alone remained faithful to Kant's list of categories, though he too rejected the Kantian deduction. Schelling's deduction is of interest since it is the only systematic defense this relatively simple list received after Kant had advanced beyond the stage of the first Critique. However, as the author says, the chief interest of these thinkers was so exclusively in constructing an "independent and unitary view" that their study of categories could not be universal and exhaustive, and, at least for contemporary German ontologists, their "systematic" as opposed to "aporetic" approaches make many of their considerations unfruitful now. Thus to understand Schelling's categorial theories (and their plurality must be emphasized, though the author attempts to picture an underlying unity), at every point it is necessary to refer to the general metaphysics which he is at the time developing. For example, the fundamental shift from the primacy of the category of relation to that of modality is not due to anything concerning the categories themselves, but to a growing importance of the concept of will (103). One feels that the investigation of categories is not the basic part of Schelling's philosophizing, especially in its late stages, and that it is hardly just to try to deal with it as a search for first principles apart from the rest of his philosophy. Nevertheless, such a study of the rational (as opposed to the Dionysian) Schelling is valuable, and this is a commendable book on his central principles.

Lewis W. Beck

Emory University

Maimonides' Treatise on Logic. The Original Arabic and Three Hebrew Translations. Edited and translated by Israel Efros. New York, American Academy for Jewish Research, 1938. Pp. xvi, 66 + text separately paged in Hebrew.

The appearance of a modern critical edition of a medieval philosophic text is always a welcome occasion which calls for the recognition and commendation of the editor's labor and industry. Dr. Efros has earned both by his edition of Maimonides' treatise, a work which played an important rôle in the transmission of the Aristotelian logic. His edition includes the orginal Arabic text based on two fragmentary Mss., three Hebrew versions—the Tibbon version based on the first printed editions, eight Mss., and Comtino's commentary; the Ahitub version based on Chamizer's text and notes, and two Mss.; the Vivas version printed here for the first time from a Paris Ms. and collated with the quoted passages in Moses ibn Habib's commentary—and, finally, an English translation. It thus forms the most comprehensive edition of Maimonides' treatise we now have. In his introduction Dr. Efros gives, in addition to a description of the various printed editions and Mss., some brief "Textual Comments" in which he attempts to dissolve those difficulties in the current editions

which were not taken care of by the process of collation. He also discusses briefly Maimonides' sources emphasizing his points of divergence in form and content from those sources with a view toward disproving Prantl's judgment of Maimonides' work as just "ein Excerpt der gewöhnlichsten Schuldoctrin".

The work was published as Volume VIII (1937-1938) of the Proceedings of the American Academy for Jewish Research.

SAMUEL KURLAND

BOSTON UNIVERSITY

Malebranche nel terzo centenario. Rivista di Filosofia Neo-Scolastica: Supplemento speciale al volume XXX. Milano, Società Editrice "Vita e Pensiero", 1938. Pp. xiv, 380.

This volume, published in commemoration of the philosopher's third centennial, is an attempt to reconstruct the thought of Malebranche. It consists of eighteen separate essays, nine expository and nine historical in nature, each written by a different author. There is no central theme, and whatever unity it has is due to the fact that each chapter was written from a common point of view, namely, Italian Neoscholasticism. The expository essays deal with Malebranche's concepts of Cosmology, Causality, Gnosticism, Reality, Human Liberty and Divine Grace, Divine Truth, the Relation of Reason and Faith, etc. The historical essays explain the relation of Malebranche's thought to Platonism and to the philosophy of Descartes, Hume, Pascal, Montaigne, and others. Most valuable is the bibliography, in two parts. The first part consists of Malebranche's works, his correspondence and polemics with contemporaries: Foucher, Arnauld, Regis, and Leibniz. The second part lists 158 studies of Malebranche.

SALVATORE RUSSO

AUBURN, N.Y.

The Analysis of Objects, or the Four Principal Categories. By AUGUSTINE J. OSGNIACH. New York, Joseph F. Wagner, Inc., 1938. Pp. xviii, 302.

After a windy preface by Mons. F. J. Sheen calling attention to the importance of metaphysics, by which he means Thomistic metaphysics, the author proceeds to an exposition of the categories of Substance, Quantity, Relation, and Quality. These are taken, as the title of the book indicates, to be characteristics of the objective world. The greater portion of the book is devoted to a laborious statement of the Thomistic notion of Substance. This finally amounts to three assertions. First, substance cannot be comprehended in a logical definition; second, its being is not in another; and, third, it is the subject of accidents. The "malignant attitude of modern thinkers", *e.g.* Kant and Spinoza, is rejected. The articles on Substance in the *University of California Publications in Philosophy,* volume IX, are stated and dismissed with a few acidulous remarks. One gathers that the chief test of philosophic truth is conformity to some standard interpretation of St. Thomas Aquinas.

J. R. CRESSWELL

WEST VIRGINIA UNIVERSITY

Drei Vorträge über Philosophie und Parapsychologie. Von JOHANNES J. POORTMAN. Leiden, A. W. Sijthoff, 1939. Pp. 76.

Mr. Poortman is a Dutch scholar, who combines philosophy with the study of parapsychology and theosophy. The first of the three unrelated addresses sketches a quasi-Kantian metaphysics, which seeks to guarantee the transphenomenal reality of the objects of human knowledge by representing them as dependent in form and matter upon a universal, unique "suprasubject", or God. The second paper argues that psychical research is a science and should not be judged by the spiritualistic company it keeps. The third discusses occult elements in literature.

J. S. FULTON

McGILL UNIVERSITY

Leviathan and the People. By R. M. MACIVER. University, Louisiana State University Press, 1939. Pp. x, 182.

This volume contains the Edward Douglass White Lectures on Citizenship, delivered at the Louisiana State University in 1939. There are three lectures, the text of which has been increased to the extent of about two-thirds of their length by the addition of observations and refletcions on the various matters dealt with in the lectures. The general subject is the contrast of dictatorship and democracy. Dictatorship is regarded by Professor MacIver as necessarily a temporary or transitional form of government suitable to and sometimes even beneficial in, a crisis or revolutionary situation. It cannot be permanent, however, because totalitarianism runs counter to the fundamental sociological fact that a state or political organization is one thing and the community in which it exists is another. A democracy recognizes this distinction, which implies some sort of constitutional guarantees, and also depends upon the free operation of conflicting opinions. This definition is compatible with the continued existence of social classes and inequalities, though the removal of some forms of economic inequality, particularly unemployment, is at present an imperative democratic aim. Economic planning is necessary but "it is a purely technical problem", and "even a partial solution would enhance the prosperity of all classes and all interests". This liberal faith that the rational always gets itself accomplished surely calls for a little explanation under present circumstances.

GEORGE H. SABINE

CORNELL UNIVERSITY

The following books have been received:

The Aesthetic Theory of Thomas Hobbes. With Special Reference to His Contribution to the Psychological Approach in English Literary Criticism. By CLARENCE DEWITT THORPE. Ann Arbor, The University of Michigan Press, 1940. Pp. x, 340.

The Architecture of the Intelligible Universe in the Philosophy of Plotinus. By A. H. ARMSTRONG. New York, The Macmillan Company, 1940. Pp. xii, 128.

The Realm of Spirit. Book Fourth of Realms of Being. By GEORGE SANTAYANA. New York, Charles Scribner's Sons, 1940. Pp. xiv, 302.

Lamartine and Romantic Unanimism. By ALBERT JOSEPH GEORGE. New York, Columbia University Press, 1940. Pp. xii, 200.

The Clash of Political Ideals. A Source Book on Democracy, Communism and the Totalitarian State. Selected and Annotated by ALBERT R. CHANDLER. New York, D. Appleton-Century Company, 1940. Pp. xx, 274.

From Descartes to Kant. Readings in the Philosophy of the Renaissance and Enlightenment. By T. V. SMITH and MARJORIE GRENE. Chicago, The University of Chicago Press, 1940. Pp. viii, 900.

The Development of American Philosophy. A Book of Readings. By WALTER G. MUELDER and LAURENCE SEARS. Boston, Houghton Mifflin Company, 1940. Pp. x, 534.

Contemporary Social Theory. By HARRY ELMER BARNES, HOWARD BECKER, FRANCES BENNETT BECKER. New York, D. Appleton-Century Company, 1940. Pp. xx, 948.

Reason, Social Myths, and Democracy. By SIDNEY HOOK. New York, The John Day Company, Inc., 1940. Pp. xii, 302.

An Essay on Nature. By FREDERICK J. E. WOODBRIDGE. New York, Columbia University Press, 1940. Pp. xii, 352.

The Present Age. And Two Minor Ethico-Religious Treatises. By SØREN KIEREGAARD. Translated by ALEXANDER DRU and WALTER LOWRIE. New York, Oxford University Press, 1940. Pp. xii, 164.

Human Nature in the Light of Psychopathology. By KURT GOLDSTEIN. Cambridge, Harvard University Press, 1940. Pp. x, 258.

Philosophical Essays in Memory of Edmund Husserl. Edited by MARVIN FARBER. Cambridge, Harvard University Press, 1940. Pp. viii, 332.

Mathematical Logic. By WILLARD VAN ORMAN QUINE. New York, W. W. Norton & Company, Inc., 1940. Pp. xiv, 348.

Fire in the Cosmological Speculations of Heracleitus. By WILLIAM C. KIRK, JR. A Dissertation presented to Princeton University, 1938. Privately printed. Pp. 60.

Why Religions Die. By JAMES BISSETT PRATT. Howison Lecture for 1940. University of California Publications, XVI, 5, pp. 95-124.

The Making of the Modern Mind. A Survey of the Intellectual Background of the Present Age. By JOHN HERMAN RANDALL, JR. Revised Edition. Boston, Houghton Mifflin Company, 1940. Pp. xiv, 696.

Marx' philosophische Entwicklung, sein Verhältnis zu Hegel. Von KONRAD BEKKER. Zürich, Verlag Oprecht, 1940. Pp. ii, 134.

Der Mensch und die Religion. Anthropologischer Versuch. Von GERARDUS VAN DER LEEUW. Basel, Haus zum Falken, 1941. Pp. 200.

La verdad, la ciencia y la filosofia. (Tratado de euristica razonada). Por FRANCISCO JAVIER A. BELGODERE. Mexico, Francisco Marruenda, Liberia "Pharos", 1939. Pp. 262.

NOTES

The first number of a new journal, *Philosophy and Phenomenological Research,* under the editorship of Professor Farber, University of Buffalo, has been received. The journal is dedicated to "competent critical mastery" of the phenomenological method. "The work of Edmund Husserl constitutes its point of departure. Looking forward, it invites the active participation of all scholars who are able to contribute toward the understanding and development of phenomenology in its now classical sense, and the further progress of philosophy in itself and in relationship to the other fields of learning."

Professor E. L. Schaub, Chairman of the Carus Lecture Committee, sends us the following announcement: "In acceptance of an invitation extended by the Committee, Professor Morris R. Cohen will serve as the next Carus lecturer. His general theme will be *The Meaning of Human History.* The lectures to be delivered at a forthcoming meeting of the American Philosophical Association will probably be devoted to the following topics: (1) "The Rational and the Empirical in History"; (2) "The Linkage of Human Events"; and (3) "The Direction of Human Effort"."

Professors Jacques Maritain and G. E. Moore are to be Visiting Professors of Philosophy at Princeton University during the second semester of the current academic year.

The following is a list of articles in current philosophical periodicals:

PHILOSOPHY XV 60: *Patrick Duncan,* Socrates and Plato; *H. H. Price,* Some Philosophical Questions about Telepathy and Clairvoyance; *W. R. Inge,* Escape; *C. E. M. Joad,* Appeal to Philosophers; *Foster Kennedy,* The Inter-relationship of Mind and Body.

THE JOURNAL OF PHILOSOPHY XXXVII 18: *F. R. Bichowsky,* Factors Common to the Mind and to the External World; *Andrew Ushenko,* Inquiry and Discourse; *Max Rieser,* Causation, Action, and Creation. 19: *W. H. Sheldon,* Professor Montague's The Ways of Things. 20: *Marjorie S. Harris,* Symbolic Logic and Esthetics; *John A. Clark,* Intuition and Criticism in Ethics. 21: *Lewis White Beck,* The Psychophysical as a Pseudo-Problem; *John M. Anderson,* Realism and the Ethical Paradoxes. 22: *John Dewey,* The Vanishing Subject in the Psychology of James; *Gardner Williams,* Some Traditional Sceptical Principles; and Their Application, Especially to Mathematics and Logic.

THE JOURNAL OF SYMBOLIC LOGIC V 3: *J. C. C. McKinsey,* Postulates for the calculus of binary relations; *G. Pólya,* Sur les types des propositions composées; *W. V. Quine* and *Nelson Goodman,* Elimination of extra-logical postulates; *J. C. C. McKinsey,* Proof that there are infinitely many modalities in Lewis's system S_2.

SOCIAL PHILOSOPHY VI 1: *Hugo F. Simon,* The Dynamics of Justice; *Walter Sulzbach,* "Class" and Class Struggle; *Thomas I. Cook,* Politics, Sociology and Values; *Moses J. Aronson,* Roscoe Pound and the Resurgence of Juristic Idealism.

PHILOSOPHY AND PHENOMENOLOGICAL RESEARCH I 1: *Marvin Farber,*

Edmund Husserl and the Background of his Philosophy; *Alfred Schuetz,* Notizen zur Raumkonstitution, by Edmund Husserl, with a preface; *Ludwig Landgrebe,* The World as a Phenomenological Problem; *Felix Kaufmann,* Truth and Logic; *John Wild,* The Concept of *the Given* in Contemporary Philosophy; *Fritz Kaufmann,* Spinoza's System as Theory of Expression.

SOCIAL RESEARCH VII 3: Fritz Lehmann, 1901-1940; *Hans Speier,* Treachery in War; *Jakob Marschak,* Peace Economics; *Ernst Peltzer,* Industrialization of Young Countries and the Change in the International Division of Labor; *Arthur Feiler,* The Worship of Bigness: Are the Small Nations Doomed?; Emil Lederer, 1882-1939: I. The Sociologist; *Eduard Heimann,* In Quest of a Program for American Progressivism; *Erich Kahler,* In Reply to Carl Mayer's "Anti-Judaism Reconsidered".

THE REVIEW OF POLITICS II 4: *F. A. Hermens,* Exit the Boss; *Robert Speaight,* The Face of English Politics; *Albert Salomon,* Crisis, History and the Image of Man; *Taylor Cole,* Corporative Organization of the Third Reich; *N. N. Alexeiev,* The Evolution of Soviet Constitutional Law; *Leo R. Ward,* Humanism and the Religious Question.

THE HIBBERT JOURNAL XXXIX 1: *L. P. Jacks,* Sir Oliver Lodge, 1851-1940; *Maud D. Petre,* Alfred Loisy, 1857-1940; *C. J. Wright,* Faith and Catastrophe; *A. E. Garvie,* The Features and the Factors of the World Crisis; *R. B. Mowat,* The Moral Significance of the United States; *J. C. Hardwick,* Fortifying the Individual; *Alexander MacEwen,* Heroic Humanism; *Reginald F. Rynd,* What Does it Mean to be a Christian?; *Richard Livingstone,* The Right of the Weak: A Problem in Ancient Dress; *Edward Lyttlelton,* What is Great Poetry? The Criterion of a Forgotten Critic; *F. J. C. Hearnshaw,* Is Christianity Committed to Pacifism?; *F. S. Marvin,* The Hope for Humanity; *G. Dawes Hicks,* Survey of Recent Philosophical Literature.

THE THOMIST II 4: *B. Lavaud,* Toward a Theology of Woman; *Charles B. Crowley,* The Rôle of Sacramental Grace in Christian Life; *John W. Curran,* The Thomistic Concept of Devotion.

THE JOURNAL OF RELIGION XX 4: *Robert E. Fitch,* An Experimental Christian Ethics; *Francis J. McConnell,* New Interest in John Wesley; *Laurence J. Lafleur,* If God Were Eternal; *Clyo Jackson,* Pseudonymity: A Modern Case; *Henry N. Wieman,* Empirical Religion: Answer to a Critic; *Anton T. Boisen,* Divided Protestantism in a Midwest County.

THE NEW SCHOLASTICISM XIV 4: *Vernon J. Bourke,* The Unauthenticity of the *De Intellectu et Intelligibili* Attributed to St. Thomas Aquinas; *Charles J. O'Neil,* The Notion of Beauty in the Ethics of St. Thomas; *Cassian Patrick Gorman,* Freedom in the God Plotinus; *Kenneth K. Berry,* The Relation of the Aristotelian Categories to the Logic and the Metaphysics.

ANGLICAN THEOLOGICAL REVIEW XXII 4: A Symposium on the Concordat (Church Congress Syllabus V, Part 3): I. *Cuthbert A. Simpson,* The Proposed Concordat. II. *Charles W. Lowry, Jr.,* An Affirmative Criticism. III. *Felix Cirlot,* Against the Concordat; *John K. Shryock,* Missions and Christian Disunion; *George Stewart,* Union from a Presbyterian Point of View; *Cyril C. Richardson,* Early Patristic Evidences for the Synoptic Chronology of the Passion; *David R. Cochran,* The Rela-

tionship Between Ethics and Eschatology in the Ante-Nicene Fathers; *Lewis M. Hammond,* The Philosophy of the State.

THE REVIEW OF RELIGION V 1: *Stephen S. Kayser,* Grünewald's Christianity; *W. Norman Brown,* The Basis for the Hindu Act of Truth; *Robert F. Davidson,* Rudolf Otto's Interpretation of Religion.

SPECULUM XV 4: *Carleton Brown,* Poculum Mortis in Old English; *Lynn Thorndike,* Elementary and Secondary Education in the Middle Ages; *Jacob Hammer,* A Commentary on the *Prophetia Merlini* (continued); *V. L. Dedeck-Héry,* The Manuscripts of the Translation of Boethius' *Consolatio* by Jean de Meung; *Sister M. Amelia,* Nicholas Bozon; *Caroline Brady, Innweorud Earmanrices; E. J. Jones,* The Authorship of *the Deposition and Death of Richard II* Attributed to Créton; *A. H. Schultz,* The Localization of Daude de Pratas; *J. C. Russell,* Attestation of Charters in the Reign of John.

PHILOSOPHIC ABSTRACTS I 3.

JOURNAL OF THE HISTORY OF IDEAS I 4: *Richard F. Jones,* Science and Criticism in the Neo-Classical Age of English Literature; *Francis R. Johnson,* Gresham College; Precursor of the Royal Society; *Otto Kraushaar,* Lotze's Influence on the Pragmatism of William James; *Frederick H. Cramer,* Isolationism: A Case-History; *Frederick J. E. Teggart,* A Problem in the History of Ideas; *Kemp Malone,* The Rise of English Nationalism.

THE AUSTRALASIAN JOURNAL OF PSYCHOLOGY AND PHILOSOPHY XVIII 2: *D. A. T. Gasking,* Mathematics and the World; *G. F. Stout,* Things, Predicates and Relations; *Duncan Howie,* The Problem of Analysis in Psychology; *D. R. Martin,* Mental Tests in Clinical Practice.

THE BRITISH JOURNAL OF PSYCHOLOGY XXXI 2: *H. S. Langfeld,* Professor McDougall's Contributions to the Science of Psychology; *T. H. Pear,* The 'Trivial' and 'Popular' in Psychology; *R. W. Pickford,* The Psychology of the History and Organization of Association Football. Part II; *B. Semeonoff,* Further Developments in a New Approach to the Testing of Musical Ability, with Special Reference to Groups of Secondary School Children; *D. F. Ward,* Dip in Work Curves; *G. A. Ferguson,* A Bi-Factor Analysis of Reliability Coefficients.

JOURNAL OF EXPERIMENTAL PSYCHOLOGY XXVII 4: *H. Wallach,* The Rôle of Head Movements and Vestibular and Visual Cues in Sound Localization; *N. R. F. Maier,* Studies of Abnormal Behavior in the Rat: IV. Abortive Behavior and Its Relation to the Neurotic Attack; *E. E. Robinson,* An Experimental Investigation of Two Factors Which Produce Stereotyped Behavior in Problem Situations; *E. R. Hilgard, E. M. Sait,* and *G. A. Magaret,* Level of Aspirations as Affected by Relative Standing in an Experimental Social Group; *R. Gould* and *H. B. Lewis,* An Experimental Investigation of Changes in the Meaning of Level of Aspiration; *M. Hertzman* and *L. Festinger,* Shifts in Explicit Goals in a Level of Aspiration Experiment; *R. F. Becker* and *H. N. Glick,* An Adaptation of the Smedley Hand Dynamometer for Use in Measuring Voluntary Fatigue. 5: *E. G. Wever, C. W. Bray,* and *M. Lawrence,* A Quantitative Study of Combination Tones; *O. H. Mowrer,* Anxiety-Reduction and Learning; *C. H. Wedell, F. V. Taylor,* and *A. Skolnick,* An At-

tempt to Condition the Pupillary Response; *W. B. Pillsbury* and *A. Sylvester,* Retroactive and Proactive Inhibition in Immediate Memory; *R. B. Hackman,* An Experimental Study of Variability in Ocular Latency; *F. S. Keller,* The Effect of Sequence of Continuous and Periodic Reinforcement Upon the 'Reflex Reserve'; *M. G. Rigg,* Speed as a Determiner of Musical Mood; *D. G. Paterson* and *M. A. Tinker,* Influence of Line Width on Eye Movements; *R. A. Bobbitt,* A New Apparatus for the Luria Experiment.

Psychological Review XLVII 5: *J. P. Guilford,* Human Abilities; *Edgar A. Doll,* The Nature of Mental Deficiency; *G. L. Freeman,* Concerning the 'Field' in 'Field' Psychology; *F. L. Wells,* Mental Measurement and College Objective; *Steuart Henderson Britt* and *Sidney Q. Janus,* Criteria of Frustration. 6: *Knight Dunlap,* The Method and Problems of Social Psychology; *Clarence Leuba,* The Need for a Systematic Survey of Innate Nature; *G. L. Freeman,* Dr. Hollingworth on Chewing as a Technique of Relaxation; *Brent Baxter,* The Application of Factorial Design to a Psychological Problem; *Peter A. Bertocci,* A Critique of G. W. Allport's Theory of Motivation; *Gordon W. Allport,* Motivation in Personality: Reply to Mr. Bertocci.

Psychological Bulletin XXXVII 8: *Norman L. Munn,* Proceedings of the Thirty-fifth Annual Meeting of the Southern Society for Philosophy and Psychology; *Harry Helson,* Proceedings of the Eleventh Annual Meeting of the Eastern Psychological Association; *Robert H. Seashore,* Proceedings of the Fifteenth Annual Meeting of the Midwestern Psychological Association; *Ralph H. Gundlach,* Proceedings of the Twentieth Annual Meeting of the Western Psychological Association; *Elizabeth Duffy,* A Critical Review of Investigations Employing the Allport-Vernon "Study of Values" and Other Tests of Evaluative Attitude; *Ralph H. Gundlach,* The Psychologists' Understanding of Social Issues; *George W. Hartmann* and *Paul Schiller,* Contemporary Hungarian Psychology; *Steuart Henderson Britt,* Possible Explanations of Two "Inexplicable" ESP Experiments.

Maha-Bodhi XLVIII 7: *S. Dutt,* Vaisakha Purnima at the Buddhist Temple at New Delhi; *Bhikkhu Metteyya,* Ahinsa; *D. Valisinha,* The Message of Buddha; *Lama Gesha Champell,* My Journey from Khumbum to Lhassa; *Anagarika Govinda,* The Art as a Way of Future; *P. S. Lakshminarayan,* The Origin of the Buddha Image; *the Statesman,* Buddha Day Celebrations at Calcutta, at Darjeeling, at Karachi, in Siam (a complaint), at Madras, and a comment.

Archives de Psychologie XXVIII 109: *Louisa Duss,* La méthode des fables en psychanalyse; *Madeleine Denes,* L'évolution du choix chez des enfants normaux de 3 a 7 ans; *Ed. Claparède,* La perte des idées; *André Rey* et *Hélène Zatorska,* Dominance de l'organisme mental sur l'organisme physique; *J. Kollarits,* Quelques considerations sur la biologie et la psychologie du jeu.

Logos XXIII 3: *Enzo Paci,* I fondamenti dell'esistenzialismo di Jaspers; *Alfredo Sabetti,* Attualità e Cristianesimo del Problema Metafisico Kantiano; *Arturo Beccari,* Il problema del diritto naturale nella filosofia politica; *Antonio Aliotta,* Romanticismo a platonismo nella filosofia dell'arte

di Schelling; *Paolo Filiasi Carcano,* Appunti sul problema della felicità; *Cleto Carbonara,* Immediatezza e riflessione; *Franco Amerio,* A proposito di una storia della Filosofia Italiana; *Paolo Filiasi Carcano,* Crisi religiosa e filosofia.

RIVISTA DI FILOSOFIA NEO-SCOLASTICA XXXII 4: *Carlo Colombo,* Guerra a pace nel pensiero cristiano; *Amato Masnovo,* Appunti di gnoseologia tomistica; *Emilio Chiocchetti,* Note di gnoseologia: la cognizione dell'individuale; *Francesco Olgiati,* Il concetto di "realismo" e di "fenomenismo"; *S. Vanni Rovighi,* Il primato del logos; *Giorgio Zunini,* La psicologia e l'uomo.